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SHIP BUILDING IN THE UNITED STATES.

"The Shipbuilding Industry of the United States and its Relation to the Foreign Trade" is the title of a document just issued by the Treasury Bureau of Statistics. It discusses the economic conditions which surround the present state of the shipbuilding industry in this country in both their historical and their industrial aspects. Historically it finds that the use of ironclads in the Civil War sounded the doom of wooden ships as instruments of national defence, and thenceforth turned over maritime ascendancy to the iron-producing nations, in which Great Britain had then held the leadership. But with the ascendancy of the United States in iron and steel production, and the advent of this country into the new era of oceanic responsibility, both commercially and politically, the present period of our maritime progress is clearly marked off from all that has preceded it. Historically our development in shipbuilding has reached the point at which the economic outlook is based upon the most favorable industrial and commercial condition ever known in the history of our merchant marine. These conditions are shown first in the internal development of the shipbuilding industry. The influence of the naval policy on merchant shipbuilding has developed shipbuilding plants to a point of equipment with tools and machinery, and to a scale of production which, with a larger demand for ships, would almost put the best American shipbuilders on the same plane as British shipbuilders as to cost of production. The use of electricity in the operation of shipbuilding plants, the employment of pneumatic tools and the services of cranes and derricks in handling heavy materials at every stage have revolutionized shipmaking methods in the United States to such an extent that the best shipyards in America are even better equipped than those of Europe. The chief obstacle to shipbuilding in competition with foreign ship builders is the lack of sufficient orders at our shipyards to keep them busy on a sufficiently uniform volume of work.

The difference in the labor cost of production in foreign and American ship yards is conceded to be about 50 per cent. greater on the machinery in the American yard. This difference, if accepted as correct, it is held, must be overcome by the introduction of piece-work methods of labor, and the standardizing of types and parts. The report finds that as compared with British ships, comparatively little progress has been made in this country in either of these respects, except in those located on the lakes. The lake shipyards have turned out a volume of tonnage which has enabled them to utilize European methods of reducing cost more generally than is the case of the Atlantic seaboard.

The progress on the lakes in productive economies has arisen largely from consolidation of plants, whereby specializing could be more generally developed and uniformity in type of construction introduced. The consolidation of shipbuilding plants with steel-making establishments seems to be another direction in which economies in productive cost of ships must be realized. Shipbuilders complain that the fluctuation of prices in the steel market have been among the greatest hindrances to the development of steel shipbuilding in the United States, as compares with European prices, which are more stable.

The second part of the inquiry is devoted to the study of the merchant marine as a part of the national distributive system. It cites the fact shown by statistics that with the growth in the volume of ocean commerce an increasing proportion of our surplus wealth has been handled by sea, so that the national interest has been forced to avail itself of agencies not of its own control in order to reach and maintain foreign markets subject to the discrimination of shipping lines organized in the service of our competitors. The growth in the volume of our foreign commerce is mainly responsible for the fact that American capital has practically overcome its timidity for investment in either shipbuilding or shipping. Under existing conditions, however, distribution by sea between the United States and the outside world is in foreign control. For the fiscal year ending June 30, 1900, imports and exports by sea aggregated $2,089,528, only 9.3 per cent. of which value was carried in American vessels. Numerous tables are given, showing the growth in our foreign commerce and the decline in our foreign shipping.

PIG IRON PRODUCTION.

The total production of pig iron in the United States during 1900, according to statistics collected by the American Iron and Steel Association, was 13,789,242 gross tons against 13,620,703 tons in 1899; 11,773,934 tons in 1898; and 9,652,680 tons in 1897. The production in the first half of 1900 was 7,642,569 tons, and in the second half 6,146,673 tons. In 1899 the production for the first half was 6,289,167 tons, and for the second half 7,331,536 tons. The production during 1900, according to fuel was: Bituminous, 11,727,712 tons; anthracite, 1,677,048 tons; charcoal, 339,874 tons; charcoal and coke, 44,608 tons. The production of Bessemer pig iron in 1900 was 7,943,452 tons, against 8,202,778 tons in 1899, a decrease of 259,326 tons. The production of basic pig iron in 1900, all made with coke or mixed anthracite and coke, was 1,072,376 tons, against 985,033 tons in 1899, an increase of 87,343 tons. The production of spiegeleisen and ferromanganese in 1900 was 255,977 tons against 219,768 tons in 1899.

FORETELLING THE WEATHER.

If there is one department more than another that is advisedly seeking to fill its reason of being, commend us to the U. S. Weather Bureau, Department of Agriculture.

In this connection it is to be noted that long range forecasts are becoming a matter of considerable interest and special study in the work of the Weather Bureau. The public is at last beginning to appreciate the general accuracy of the 24-hour forecasts, and in many instances they are beginning to look to the local forecaster to supply special forecasts for periods greater than 36 hours; these have been issued on a number of recent occasions, and have, as a rule, been fairly accurate, and on two or three occasions the Weather Bureau, has received resolutions from the associations interested in appreciation of the "accuracy and value of the very successful long range forecasts furnished."

Much in the same line are the three-day forecasts of wind force and wind direction reported by Prof. Moore, Chief of the Weather Bureau, in his annual report, as about to be inaugurated for the North Atlantic ocean. It is believed that with the new stations established in the West Indies, and the reports from the Bahamas, Bermuda, and those to be received from the Azores, Portugal, France and Great Britain, reliable forecasts can be made, which will supply this data for the first three days of the route of all outgoing steamers, and for an equal period for such as place themselves in communication with the Bureau before leaving European ports.

SINCE 1892, 73 accidents have occurred with water-tube boilers in the French navy, of which number 44 were due to ruptures of the tubes. Seventeen of the tubes which failed were in the bottom row. Six fractured tubes belonged to the second or third row from the fire, while in the top row, where the evaporation is completed, there were six tube collapses, eighteen more being credited to the intermediate rows. This accounts for 48 burst tubes; in other cases the location was not determined. Thirteen of the accidents were traceable to abnormally low water-level, and bad circulation accounted for six of the accidents.

ARCTIC EXPLORATION.

Evelyn B. Baldwin, the Arctic explorer, who will head the expedition that will start next summer on North Pole explorations, has just completed all arrangements for his ships and will shortly sail from Dundee, Scotland, for New York. A message from Mr. Baldwin indicates that he has finished up all necessary preliminary work on the European side. He will now come home and select his crew and make ready for the start.

Another stout whaler has been secured by Mr. Baldwin, making two of the strongest and most serviceable ships in the whaling business that have been purchased for the great undertaking. These ships are now supplied with all necessary steam and boiler fittings, and very little changes will have to be made, as they were built for the polar seas and long voyages.

The largest task that now remains is to fit up the ships with the necessary equipment in the way of sledges, boats and the paraphernalia necessary for Arctic expeditions, embracing thousands of articles no one would think of unless he has had experience in the Arctic regions.

William Zieglar the man who is sending the expedition to the pole and who is bearing all the expense, is determined that it shall be a success in so far he is concerned. He has given to Mr. Baldwin the authority to go ahead and contract for everything that may be needed to make the expedition the most perfectly equipped ever sent north. Next summer, when the Ziegler expedition starts, a half dozen other big expeditions will be starting or already on the way to the pole. Naturally, the competition will be keen. Mr. Baldwin is determined to reach the pole and to be the first one who accomplishes that achievement. The other expeditions are to be sent forth by wealthy societies, by governments or by large organizations; the Zieglar expedition was backed by but one man, and he is a private individual.

Explorer Baldwin, the man who has been picked to lead the large band of explorers on the hazardous journey, is a man with a wealth of experience in similar expeditions. He went with Peary on his Greenland explorations and was with Walter Wellman when that well known newspaper man made his dash into the polar regions. The expedition next summer will be the fourth or fifth on which Mr. Baldwin has embarked.

STEAM TURBINES.

The adoption of steam turbines for the actuating of propellers in steamships is about to enter on another phase. So far the use of steam turbines has been confined to vessels of the torpedo destroyer type, the vessels so fitted being the Turbinia, the Viper and the Cobra. Now a vessel is being built at Dumbarton by Messrs. Denny for the Fairlie-Campbeltown service. It is 250 feet in length, 30 feet beam, 10 feet 6 inches depth molded to main deck, and 17 feet 9 inches to the promenade deck. The machinery will consist of three separate turbines, driving three screw shafts, a high pressure on the center shaft and a low pressure on each of the outer shafts. Inside the exhaust ends of each of the latter will be two astern turbines in line with the low-pressure motors and operated by reversing the direction of rotation of the low-pressure motors and outside shafts. In ordinary ahead going the steam from the boilers will be admitted to the high-pressure turbine, and, after expanding about five-fold, pass to the low-pressure turbines, then expand another 25-fold, and pass to the condensers. The total expansion will thus be about 125-fold as compared with eight to sixteen-fold usual in triple-expansion reciprocating engines. At 20 knots the speed of revolutions of the center shaft will be 700, and of the two outer shafts, 1,000 per minute.

DULUTH—SUPERIOR.

Special Correspondence to The Marine Record.

Plans are being drawn up for the construction of a new merchandise dock at Two Harbors. The present one is not large enough to accommodate the lumber and pulp wood boats that sometimes dock, and still have room for the passenger and north shore traffic boats. The new dock will be built in front of the general office.

The steamer Bon Ami returned to Duluth from Beaver Bay Saturday evening and is being laid up. Ice now extends into the lake a distance of twelve miles off Duluth. The Bon Ami has run late for the past two seasons, but Feb. 9 is a record breaker for continuous navigation on Lake Superior, counting from the opening of the season in April. The Bon Ami started out on the north and south shore runs about the middle of April last and she has operated continuously ever since.

James J. Hill, with a party of ten guests, will leave New York on Mr. Hill's private yacht Wacouta within a few days. The Wacouta will be outfitted for a five months' trip though the present calculations contemplate only an absence of four months. As near as can be ascertained now the Wacouta will sail from New York by way of the Bermuda Islands about the 18th inst., the first important stop being made at Naples. Thence the itinerary takes Mr. Hill and his party through the Mediterranean sea, where a large part of the time allotted for the trip will be spent.

There are many enquiries for lumber and some important sales are reported. There were no buyers this week, but a number of them are expected during the coming week. Prices are firm and the spring trade outlook is good. The Perley Lowe Co. recently purchased the season's cut of the H. Witbeck Co. as it has done for several seasons past. The amount will be about 35,000,000 ft. The deal was negotiated in Chicago by Mr. Lowe and John H. Witbeck. The Tyler Lumber Co., of Tonawanda bought 1,000,000 feet of pine lumber from the John Schroeder Co. This is part of the stock manufactured at the mill of the Menominee River Lumber Co. last season. Other large deals have been made and there are more in sight, so that brisk shipments are assured in the spring, nor is it likely that there will be much dickering about a few cents in the lower lake freights.

Rather a pessimistic view was expressed by a Duluth vesselman this week who only wants to get freights down to the lowest notch ever touched from the head of the lakes. He says that one cargo of wheat left Duluth at ¾ cents and figures that this summer will see the rate down to that starvation rate again, although Chicago wheat is loaded at 1 cent for winter storage with the going rate on the opening of navigation certainly. The storage of the crop will have a bearish effect on the ore rate. There is no prospect of a continued heavy movement of grain owing to the short crop. A strong effort is being made to bring in coarse grains from new territory in increased volume to compensate in part for the shortage of wheat. One thing is sure, and that is the lumber situation, brisk and early shipments will be the order of the day, always providing that the lake rate is not in excess of all rail, say to Chicago, otherwise it is too early this season to figure on ore, grain or coal and it looks like, in fact is, a late season for chartering.

Wonder what's going to happen around here in the granting of life saving medals, its a dog's age since anyone on the lakes was granted a medal for heroic life-saving services. The Hon. S. I. Kimball, chief of the service, is of the opinion that the keeper of the life-saving station here is entitled to a medal. Again Capt. Peterson, of Tonawanda is making efforts to secure a life-saver's medal for Capt. William H. Strong, and the papers in the case have been sent to Washington. Capt. Peterson was in charge of a lumber schooner which went on a sand bar in Lake Superior last August in a hard blow. Capt. Strong stood by in his steambarge for 26 hours, at the risk of his own vessel, and finally succeeded in saving Capt. Peterson and all of the crew of his schooner, which eventually became a wreck. By all means should medals, or other recognition be vouchsafed wherever and whenever called for. The Treasury Department has not or won't take any notice, so what's the matter with the Lake Carriers' Association taking the matter up as the RECORD has advocated in the past. Let the rank and file see that their employers take some interest in their welfare and this can be done by a due acknowledgement of personal acts of heroism.

THE equinoctial storms are no longer believed in by scientific persons. The equinoxes are the dates of the year when the sun crosses the equator at one of the equinoctial points. They occur about March 21 and September 21, and, though storms have been known to occur about those times, they are no longer considered as due to the perfectly natural occurrence of the crossing.

CLEVELAND.

Special Correspondence to The Marine Record.

C. R. Price, who was chief engineer of the steamer City of Glasgow last season, will have charge of the new steamer J. T. Hutchinson's machinery.

General Manager J. C. Wallace, of the American Ship Building Co., returned home yesterday after a month's trip. He visited Montreal, Quebec and other eastern cities.

There is no chartering to speak of now nor will anything be done in iron ore until ore figures for the season are about fixed. The Lake Superior rate is rumored as being around 80 cents on season charters.

The keel for the first of the steamers to be built in sections and taken to the coast will be put down at the local yard. She will be built at the berth which was made vacant by the steamer J. T. Hutchinson, launched Saturday last.

Next Tuesday the draw at Superior street viaduct will be closed to permit repairs to the boiler and engines. It is expected these will require five days. Vesselmen have been notified by City Engineer Ritchie, so that movements of ships can be planned accordingly.

The freight market is dull all around. The coal and ore men are not ready to talk business and from present indications there will not be any chartering done this month. Chartering in the grain trade is not as active as it usually is at this time but the demand for tonnage is better than it was a few weeks ago.

The Ashtabula Passenger & Fishing Co. have sold their fish tugs, the Effie B. and William H., to the Buckeye Fishing Co., of Cleveland, and will go out of the fishing business. The company was organized five years ago and for some time prospered, but for the past two years has lost money, and the stockholders have decided to dissolve the company and sell the property.

At the annual meeting of the directors of the Cleveland City Forge and Iron Co., held this week, the former officers of the company were re-elected. The condition of the company was found to be excellent. The Cleveland City Forge and Iron Co. has a reputation that extends beyond the confines of the United States. During the last year the company received and filled orders from many foreign countries.

A mass meeting of the employes of the local shipyards was held here on Saturday, at which the ship subsidy bill was heartily endorsed and measures taken to bring the action of the meeting before Congress at as early a date as possible. It is the general opinion that when the bill is passed by Congress, shipbuilding will experience such a boom as never has been seen before, although the yards are doing about all they can now.

While Lee Brogan, manager of the Cleveland fleet of the Great Lakes Towing Co., was East a short time ago on his vacation, the members of the local harbor, No. 42, of Masters and Pilots, got together and decided to remember him in a substantial way when he came home. A special meeting was held on Monday night and in the name of the members he was presented with a fine gold watch charm in the form of emblem of the order.

The average rate on all iron ore moved from the head of Lake Superior to Lake Erie ports during the past year was $1.2068. About 12,000,000 tons of freight paid this rate. The season rate on contract charter was $1.25, and the wild and late rates were enough less to bring the average down these 5c. only. It has been supposed that the average was much less, but the preponderance of traffic early and in contract ships was so great as to hold the whole well up.

It now appears as if the Carnegie-Conneaut improvement scheme is to turn out "a flash in the pan" after all. There seems to be as much diplomacy observed in handling millions of dollars as there is in settling the fate of nations. The keenest and best financiers, capitalists and promoters find that "Andy" is no baby at any stage of the game. He is honorable enough to look after the best interests of the minor stockholders too, can saddle the welfare of others as well as his own.

Thieves and vandals damaged ten naphtha launches and the yacht Alert to the extent of several thousand dollars some time Sunday night at their winter quarters in a slip in the old river bed. All the brass and metal trimmings and fixtures of the launches and yacht were torn off and carted away. The engines were removed from three of the launches. The cabin of the Alert was practically wrecked by the thieves in their search for plunder. A brass rail, which extended around the yacht, was also taken away, and twelve deadlights were removed.

Col. Mansfield, Corps of Engineers, U. S. A., in charge of the conservancy and improvement of rivers and harbors in this district was banqueted last week by the Lorain Board of Trade. Col. Mansfield, in the course of his remarks during the evening, stated that Lorain river had but three feet of water when the government first started improvements; now the port is frequented by the largest and deepest-draft vessels on the lakes and further improvements were still in progress looking to the safety and betterment of the port in accommodating the general traffic of the lakes.

Mr. Robert Curr, formerly superintendent of the Globe ship building yards, and more recently inspector of hulls for the Bessemer line, also general surveyor and consulting shipbuilder, has closed an engagement for a position with the Risdon Iron Works, of San Francisco. The Risdon company has recently enlarged its plant, so that Mr. Curr will no doubt find ample opportunity to display his technical and executive ability. Mr. Curr is a pleasant, unpretentious gentleman, whom many will be sorry to lose in the lake service, and whether he will be satisfied with California or otherwise, will wish him back "on his old hunting grounds." The RECORD has to thank Mr. Curr for many past favors, and I can but wish him every prosperity in the future.

The Cleveland steamer Presque Isle, of which Capt. Lowe of this city is master, carried more freight through the "Soo" canal last season than any other vessel. The steamer John W. Gates carried the largest cargo, and the steel towbarge Madiera was second. Annual statistical report of lake commerce passing the ship canals of Sault Ste. Marie, Mich., and Ontario, for the season of 1900 has been compiled. It is comprehensive and exhaustive, containing valuable tabulated comparisons and other data concerning the enormous traffic of the Lake Superior region. Total value of freight carried was $267,041,959; vessel property engaged in transportation valued at $69,735,159, with total registered tonnage of 25,585,934. The total freight through the two canals was 25,643,073 tons, exceeding the best year by 2 per cent., but the smallest percentage of increase in ten years, owing principally to 32,000,000 bushels of wheat and grain and 340,000 tons less anthracite coal shipped than in 1899.

PORT HURON.

Special Correspondence to The Marine Record.

Mrs. George Tebo, of Chicago, is ill at the residence of B. J. Karrer.

James Reed, the Bay City wrecker, is spending a few days in Port Huron.

Capt. Wm. Forbes is able to be around the house again after his recent illness.

Boynton & Thompson are overhauling their office building at the foot of Butler street.

Capt. Wm. J. Hayes will again command the steamer P. H. Binkhead this coming season.

F. G. Chesborough, of Bay City, owner of the new steel boat in course of construction at the Jenks Ship Building Co., is visiting Port Huron friends.

Simon Langell, the St. Clair shipbuilder, spent Saturday afternoon in Port Huron calling upon the members of the Shipmasters' Association.

Capt. W. E. Rice and wife, who have spent the past few days with Port Huron friends, will return to their home at Harbor Beach on Wednesday.

Marine Reporter Ed. J. Kendall says there is but very little demand for vessel charters in Port Huron this winter. He considers the condition somewhat remarkable.

It is understood that Capt. James Reed has been awarded the contract to place the boilers into the new boat which will soon be launched by the Jenks Ship Building Company.

Joseph Hart, who has for a year past been with the Jenks Ship Building Co. as a fitter, left on Saturday for Newport News, Va., where he has a similar position in a shipyard holding contracts for government work.

James Moffat still continues seriously ill at his home on Broad street. He is the veteran tug owner, he is over 75 years old, and the last few years has begun to tell on the captain, he ran a ferry from here to Sarnia when they used horses for power.

The new steel boat, Welland canal size, which is being built at the Jenks Ship Building company's yard, will be ready to launch in about 30 days. As soon as the boat is off the stocks the keel will be laid for a new vessel, a duplicate of the Ravenscraig.

Some of the appointments of Algonac captains have already been made and are as follows: Capt. H. H. Townsend, steamer Lagonda; Capt. Richard Jackson, steamer Mark Hanna; Capt. Geo. Moore, steamer Minneapolis; Capt. Stephen A. Lyons, steamer Centurion; Capt. Charles Ainsworth, steamer Shenandoah; Capt. Peter Starger, steamer Point Abino.

The jury in the case of Capt. John Hayes vs. George Stortz rendered a verdict in favor of Capt. Hayes to the amount of $1,800. It is said that the jury stood for 10 hours 11 to one in favoring of rendering a verdict for the plaintiff in the case. The suit grew out of a vessel deal between Capt. Hayes and Mr. Stortz. The case will be appealed. This is an outcome of Hayes buying an interest in the steamer T. D. Stimson with Stortz.

The Standard Contracting Company, of Cleveland, O., has submitted two propositions to the canal commission. The company will construct a canal through Huronia Beach on a direct line to Black river, which includes right of way, for $95,000. It will construct a canal through Lakeside park and in a northwesterly direction through Lakeske cemetery, including the right of way, for $90,800. It is said that the company will guarantee the straight route to do the work required, but will make no guarantee for the crooked route. The company's bid over the park route is several thousand dollars higher than the bid of Talbot & Co.

BUFFALO.

Special Correspondence to the Marine Record.

The Union Dry Dock Co. is building a 115-foot passenger propeller for the Bedell House Co. The compound engine, 14 and 30 by 20 inch, will be constructed by Charles Whitman & Co., of Buffalo, and the boiler by M. Riter.

Coal shippers are not in a position to talk of freights at all as yet. The large railroad companies of the northwest are not in the market, and even if they were ready it is not probable that anything would be done, as the meetings of operators and miners for a settlement of wages do not occur until the last of the month.

The David Bell Co., of this city, has received the contract to build a large tug for Harry Dunbar, the contractor, for use in connection with Mr. Dunbar's dredging contract at Albany. When completed the tug will be taken through the Erie canal to the scene of operations. The tug will be 75 feet long, 17 feet beam and 9 feet deep. She will have a fore and aft compound engine of 12¾ and 32-inch diameter of cylinder by 24-inch stroke. The tug will be completed in June and will cost $22,000.

It is rumored that Buffalo may get a new drydock as the result of the American Ship Building Co's. purchase, which threw Edward Gaskin out of his job. Mr. Gaskin, who now acts as Buffalo manager of the Union Steamboat Co's. fleet, is known to be aching to return to ship building and repair work, hence rumor connects his name with the scheme, if money enough can be got together; however, competition in this line is out of the question with the American Ship Building Co. and no other docks would receive patronage enough to keep them going.

The extremely cold weather of the past week has caused the ice to form in such quantities on Buffalo river and the city ship canal that the use of the two fire boats in commission was rendered necessary to open a channel for the safety of the valuable properties along the docks. Every other day the boats began the work of relieving the dangerous conditions by clearing a channel about 30 feet wide running up the river as far as Hamburg street and returning to the canal run up to the end at the Tifft farm. The boats had no difficulty in plowing through 12 or 13 inches of solid ice.

The winter meeting of the cargo pool agents has been held here. A comparison of notes showed that one or two of the agencies will be able to figure out a profit of about 11 per cent. on the past season's business. All the others are less fortunate, while one at least admits that the profit has been too small to be assignable. So the rates of last season were re-affirmed and the same form of policy was agreed upon. It being a general meeting the question of hull rates came up, but no definite action was taken. The members held that six weeks hence would be early enough to fix the tariff. Still it was the opinion that as the earnings had been about on a par with the cargo earnings it would be impossible to accept any lower rates. No change of companies or agencies is looked for.

DETROIT.

Special Correspondence to the Marine Record.

David Carter, general manager of the D. & C. line, who has been seriously ill for several days, is reported much better.

The citizens of Sault Ste. Marie will tender a complimentary banquet to Francis H. Clergue, Esq., manager of the Lake Superior Power Co., at the Hotel Iroquois, Thursday, February 21st. Mr. John G. Stradley, chairman of the citizens' committee is now selecting out-of-town invitations and the affair will no doubt be the event of the season for upper Michigan.

Mrs. Theresa Sharrow, of Port Huron, has commenced a $15,000 damage suit against the Darius Cole Transportation Co. for the death of her husband, who was drowned Sept. 5, 1900, near Algonac, Mich. Sharrow was towing behind the Idlewild at the time in a small boat, and it is alleged that the steamer started to back up without any warning or signal and overturned Sharrow's boat, drowning him. Mrs. Sharrow alleges that the steamer's crew were negligent and some signal should have been given to Sharrow of his danger.

A Duluth maniac has the following to say: "Every few years there is a great deal of pessimistic talk about lake freights, yet it is a known fact in transportation business that any boat above 3,000 tons can pay for herself in about six seasons." Holy man of the mast! This genius must be slinging ink or wasting graphite in the interests of, if not from an underwriter's standpoint. A Cleveland owner was willing to give away some of his tonnage for a good sandwich a few seasons ago and others would let go to anyone who would pay their bills.

Charles W. Norton, one of the best known of Detroit citizens, lies at death's door in Grace hospital, and there is no probability that the genial vessel agent will ever again greet his friends in his old haunts. A severe fall sustained by Mr. Norton while crossing the car tracks opposite the Russell house about Thanksgiving time resulted in an attack of peritonitis from which he has never fully recovered. Then an acute form of stomach trouble attached him. For three weeks it was impossible for him to retain solid foods and at times even water. This was overcome eventually and strength was returning when gradually a form of liver trouble resulted which developed into a complication of kidney, liver and stomach trouble that has baffled medical skill. Of late years Mr. Norton chartered almost every bushel of grain shipped mid-lake from Detroit.

CHICAGO.

Special Correspondence to The Marine Record.

Between the competition there is likely to be some close season contracts made for towing. The Great Lakes Towing Co. and the Maytham Towing and Wrecking Co. are now fairly in the field and a business hustle is the watchword.

As a temporary measure for deepening the Chicago river over the Washington street tunnel, pending the settlement of the question as to when and by whom the Chicago river tunnels will be permanently lowered, the board of trustees of the sanitary district has decided to have the top of the tunnel chiseled off sufficiently to increase the navigable depth of the river 10 inches.

Chamberlin and Co., of this city, have been awarded the contract for raising the battleship Maine in Havana harbor, and also the Spanish transport Alfonso XII, which is beached on the shore near by the Maine. The Chamberlin agreement is to raise both vessels for the salvage there is in them. It also covenants to pay the United States government 3 per cent. of all proceeds, besides restoring all personal property to the officers and crew of the Maine.

The steel steamer Kearsarge, which is operated by Pickands, Mather & Co., Cleveland, was the first large boat to charter on a season contract for 1901. She has been fixed by the Canada-Atlantic Transit Co., and will trade between Duluth and Depot Harbor. It could not be learned what the owners of the steamer get but it was reported that the charter was made on the basis of 75 cents on ore, probably with several important concessions, such as insurance paid, etc. Last year the Kearsarge was chartered to the same company at $85,000 for the full season. The Kearsage is one of the best package freight carrier on the lakes.

A report from Muskegon that the Barry Bros. are negotiating for a steamer to take the place of the State of Michigan is contradicted by Capt. Peter Barry, the Milwaukee agent of the Chicago-Milwaukee line. He says that the State of Michigan will be sold as soon as a suitable steamer can be found to take her place, but at present the market is barren of vessels calculated to meet the necessary requirements, and the State of Michigan will therefore not be forced upon the market. As it is, the Barry line service between Chicago and Muskegon will be greatly improved the coming season by the acquisition of the Alice Stafford.

For winter storage, 1 cent is being paid on wheat, the going rate to be accepted on the opening of navigation. It develops that Nye, Jenks & Co., Milwaukee, have the steamers Orinoco and Amazonas both under charter for Midland or Buffalo, shippers' option. The Orinoco began loading oats today and the Amazonas will follow her for a cargo of corn. The rates agreed upon are 1⅜ cents to Midland and 1⅝ cents to Buffalo on oats; 2 cents to Midland and 2¼ cents to Buffalo on corn. These engagements virtually establish rates for other charters that may be made in the near future. The latest Chicago charter for corn was made at 2½ cents to Buffalo. Agents there hold vessels at this figure, while shippers are bidding 2⅜ cents.

Whoever would have thought a few years ago that the rest of them would be after "Dick" Powers' scalp, and Elderkin's too? There must be some foreign blood infused into the Seamen's Union antagonistic to such veteran war horses as Powers, Elderkin and others. Any action of the Chicago Seamen's Union without "Dick" Powers' fine Italian hand being in sight is incomprehensible, p'raps the union don't owe Dick much, but he has been its body and breeches for lo these many years, and now, because he happens to hold a government job, his expulsion is to be sought from his own union. It is probable that those members holding political jobs (and no doubt all would like to) will put up a strong fight to hold their rights of membership in the union.

Judge Kohlsaat has just handed down a ruling that the police power of Chicago is not taken away by act of Congress for the improvement of the Calumet and other rivers, and refused to grant an injunction to prevent the city from interfering with the construction, by the Calumet Grain & Elevator Co. and the Columbus R. Cummings estate, of a dock which would have extended sixty-five feet into the Calumet river. Last August the elevator company and the Cummings estate secured a government permit to build an extension of their dock along the river, south of the Ninety-fifth street bridge, on the west side of the stream. Application was then made to R. B. Wilcox, city engineer in charge of the harbor, for a city permit to do the work. He refused to grant the permission, raising the point that, though the government had given its sanction, such action was taken with a view to protecting the navigability of the river, and not to take away the rights of the city as riparian owner. Insisting that a city permit was not necessary, the dock owners began work. Engineer Wilcox called on the South Chicago police and stopped the work after one pile had been driven.

Funeral services over the remains of Capt. James S. Dunham, president of the River Improvement Association and one of the oldest vesselmen on the lakes, were held on Saturday afternoon at his late residence, No. 29 Bellevue place. Vesselmen from all over the country were in attendance and the Cleveland lodge of Masons, of which Mr. Dunham was a member, was largely represented. Rev. Thadeus Snively, of St Chrysostom's Episcopal church, conducted the services. The remains were placed in a vault in Graceland. Only the immediate friends and relatives of the deceased followed the casket to the cemetery. The pallbearers were Albert Wisner, Edward O'Brien, Chester Blackman, Edward E. Ayer, Marvin Smith and William F. Johnson. A large number of vesselmen and grain shippers gathered in the arbitration room of the board of trade at Chicago Friday last to take action on the death of Capt. James S. Dunham. Speeches were made by Wiley M. Egan, T. T. Morford. George L. McCurdy and others, and resolutions were adopted. The Chicago Lake Line Agents' Association held a special meeting and adopted resolutions regretting the death of Capt. Dunham.

FLOTSAM JETSAM AND LAGAN.

The keel for the palace steamer for the Richelieu & Ontario Navigation Co. has been laid by the Bertram shipyard in Toronto. It is claimed that her cost complete will be $450,000

The Milwaukee Dry Dock Co., is laying the keel of a fueling scow for the Pittsburg Steamship Co., which is to be stationed at Conneaut, O. The scow will have a length of 170 feet, 34 feet beam and about 12 feet hold and her fuel carrying capacity is intended to be between 600 and 700 tons. Construction will be of wood. The craft is to be completed and in readiness for towing for Conneaut by the opening of navigation.

Lloyds agent at Browhead, south coast of Ireland, exchanged wireless messages last Saturday with the White Star freighter Georgic, Capt. Thompson, which left Liverpool for New York the previous day, when she was twelve miles out at sea. Calls from the shore to the ship and from the ship to the shore were made as quickly and easily as by telephone. Other experiments are being conducted over longer distances.

Vesselmen at Manitowoc complain that the river could never have been dredged to the depth of twenty-one feet as given out by the city officials. Vessels which loaded grain at elevators recently were compelled to pay additional tow bills because of grounding while being shifted back to their winter moorings. The depth of water in portions of the river is claimed not to exceed fifteen feet. The barges Amazon and Aurora, as well as the steamer Fedora, required the assistance of the carferries in getting back to their docks.

At the recent annual meeting of the Clyde Sailing Shipowners' Association in Glasgow, reference was made to the French bounty system. A prominent shipowner said that French sailing vessels were being built on the Clyde, only the sails coming from France, yet these ships were taken to France and fitted out, and received a bounty. That was a matter for the consideration of the British government. The chairman said they did not believe that the United States would follow the example of France on the bounty question.

THE SHIPMASTERS' ASSOCIATION—RESOLUTIONS OF APPROVAL—TOKEN OF ESTEEM, ETC.

MR. ALEXANDER J. MCKAY,

Grand President, Shipmasters' Association.

Resolved, That we tender our sincere thanks and appreciation to our retiring grand president, Alexander J. McKay, for the able manner in which he has discharged the duties of his high office during the last year. We deeply realize and sincerely appreciate the results of his arduous labors in bringing about the desired repeal of that obnoxious law compelling pilots to pass a supplementary examination, which each and all of us most heartily approve.

Resolved, That a copy of this resolution be presented to Alexander J. McKay, and that the same may be printed in the minutes of this meeting.

J. A. WARD,
S. C. HERRICK,
HENRY LEISK, } Commitee.

CAPT. A. J. MCKAY,

Mr. President and Brother:—I find it my privilege to perform, in behalf of Lodge No. 7, Shipmasters' Association, what is to me the most pleasant feature of this afternoon, and I know of no more appropriate time than now, while under the "good" of the order. In consideration of our appreciation of your noble office towards this association, and the very high esteem in which you are held by your brothers, we desire to bestow upon you a token, signifying in some degree at least, what we individually feel towards you.

Your efficient and active personal interest, demonstrated in the project of eliminating the bill requiring re-examination of masters and pilots, has been heartily approved and sincerely appreciated by your brother shipmasters. This inestimable service, together with the true interest you have manifested in all that pertains to this association is, we feel, deserving of our most worthy recognition.

Permit me, therefore, on behalf of Lodge No. 7, Shipmasters' Association, to present to you this ring, the gem of which but symbolizes your own brilliant and admirable character; the band of gold, a testimony and symbol of your heart; and, in conclusion, may this golden circle prove an emblem of the unending support and purity of feeling existing in the hearts of those within the circle of this lodge.

L. M. STODDARD.
Shipmaster of Lodge No. 7.

GEO. MERRITT,
HIRAM STILL,
H. H. PARSONS, } Committee.

DEVELOPMENT AT SAULT STE. MARIE.

WHAT MR CLERGUE INTENDS TO DO.

TORONTO, Feb. 12, 1901.—F. H. Clergue has recently returned from Europe. He hold the great territorial, mineral and timber concessions made to him at the last session of the Dominion Legislature. These concessions consist of two parts—one made to the Algoma Central Railway Co., the other to the Ontario, Hudson Bay & Western Railway Co. These two roads when completed will give a continuous line from Sault Ste. Marie to James Bay. The grant to the Algoma Central Railway Co. consists of 7,400 acres a mile throughout its 150 miles of main line, that to the Ontario, Hudson Bay & Western Railway Co. consists, first, of a cash subsidy of $2,000 per mile throughout its 240 miles and a land grant of 5,000 acres per mile. To earn these grants the roads must be built, and several other conditions must be fulfilled to secure the Algoma Central subsidies. These conditions are specified in an act passed last session. 1, 225 miles of line must be built before May 1, 1903; 2, there must be additional water power development at Sault Ste. Marie of 40,000 horse-power; this to be done in three years; 3, smelting and reduction works are to be built there, having a capacity of 300 tons of ore per day; they must be completed in two years; 4, chemical works, requiring 5,000 horse-power for their operation are to be completed in the same time; 5, a new pulp mill of 50 tons daily capacity to be erected at the Sault, to be finished within a year: 6, every year for 10 years 1,000 male settlers of the age of 16 years or over, must be placed on the lands traversed by the Algoma Central Railway; 7, for this purpose immigration offices are to be established by the Algoma Central Co. in Toronto and somewhere in the United Kingdom; 8, a line of steel steamships of not less than 2,000 tons each must be maintained between Michipicoten and Sault Ste. Marie.

Several of these conditions are in an advanced stage of performance. Upward of 40 miles of the Algoma Central railway are built, and further construction is being pushed. Four steamers were placed on the lakes last season by the company. The pulp mill is completed. As for the state of progress in other respects some idea is furnished by the following synopsis of an interview given by Mr. Clergue while in Toronto :

While in Europe he arranged for the addition of four large steamers to his freight fleet, which will raise the number to eight. The new boats are to be of the same class as the first four, being of the same capacity, 2,500 tons each. The entire fleet will be employed in carrying ore from Michipicoton to the Midland and other Canadian furnaces. His Bessemer steel plant at Sualt Ste. Marie will, he says, be turning out 600 tons of steel rails per day by next July. For the first season the pig iron will be drawn from the Midland furnace, but by next December there will be two 300-ton blast furnaces at Sault Ste. Marie itself, Mr. Clergue says. As for bringing in the quota of immigrants called for by his contract, he says he opened immigration bureaus at London and Liverpool, and made arrangements for bringing over large numbers of miners, artisans and laborers from Norway and Sweden. When navigation opens in the spring these will begin to arrive. By July Mr. Clergue expects 2,000, and by the end of the present year between 3,000 and 4,000. A large number of the men secured are, he says, skilled workers in iron and steel and are to be employed in the Sault Ste. Marie steel plant and rail mill. Coming from Norway and Sweden, as many of the immigrants are, they will find themselves at home in the Algoma climate and in the work of mining and timber cutting.

BRIDGE WORK AT CHICAGO.

Contracts for the construction of bascule bridges across the Chicago river at Ashland Ave. and Canal and Main streets, Chicago, were awarded last week by the drainage canal trustees. Work on two of the bridges will be commenced at once, but that at Canal street may be delayed somewhat. The contracts for the bridges at Canal and Main streets were let to the American Bridge Co., the Massillon Bridge Co. securing the contract for the Ashland Ave. bridge. All of the bridges will be of the bascule type, allowing the full width of the spans for the passage of vessels. The spans will be 140 feet long in each case. The contract prices of the bridges were as follows: Canal St., American Bridge Co., superstructure, $71,100; Lydon & Drews Co., substructure, $53,914,30. Main St., American Bridge Co., superstructure, $72,800; Lydon & Drews Co., substructure; $51,913.45; Ashland Ave., Massillon Bridge Co., superstructure, $91,200; Page & Schnable, substructure, $35,542 45. The Drainage Canal Commission now has at work a board of engineers preparing a comprehensive plan of improvement for the Chicago river. This plan, when completed, will call for the erection of a great many new bridges of the lift or bascule type, to take the places of the old draw bridges.

LAUNCH OF THE J. T. HUTCHINSON.

The steel built cargo steamer J. L. Hutchinson was successfully launched from the Cleveland yards of the American Ship Bulding Co. on Saturday morning last.

The new steamer was built to the order of the Pioneer Steamship Co., Cleveland, Hutchinson & Co., managing owners.

Quite a fair-sized crowd attended the launching, and the christening ceremony was gracefully performed by Mrs. Chas. L. Hutchinson. Among those present on the christening platform were: Mr. and Mrs. J. T. Hutchinson, Mr. C. L. Hutchinson, Mr. and Mrs. Frank Morrison, Mr. and Mrs. P. J. McMyler, Miss Sue Smith, Miss Rock, Mr. J. A. McGean, Mr. R. C. Wetmore, Mr. William Smith, Mrs. E. W. Doty, Mrs. Jean Smith, Mr. J. F. Whitelaw, Mrs. Charles Meyers, Miss Smith, Mr. W. H. McGean, Mr. Robert Wallace, Mr. and Mrs. O. T. Loer and Mr. Robert Logan.

The Hutchinson will be ready for business by the opening of navigation. The new boat is a duplicate of the steamers Neptune and Saturn, built for Mr. J. C. Gilchrist, which were launched at Lorain. Her general hull dimensions are 366 feet over all, 346 feet keel, 48 feet beam and 28 feet deep. She will have triple expansion engines, cylinders 22, 35 and 58 inches by 42-inch stroke. Steam will be furnished by two Scotch-type boilers to be allowed 170 pounds of steam. The new boat, which will cost $215,000, will carry 4,800 gross tons on eighteen feet draft.

Capt. J. H. Smith, who sailed the steamer Brazil last season, will command the Hutchinson.

ENORMOUS POWER OF AN OCEAN LINER.

In the problem of the application of motive power to transportation as a form of production, in the sense that it increases the value or utility of a product, the significance of the development of motive power transends almost any other consideration, says the Engineering Magazine. A somewhat impressive example can be derived from the rough calculation of the meaning that would attach to a trans-Atlantic liner with a 20,000 horse-power engine were that engine to be replaced by a 20,000 horse-power of human muscles. To run night and day there would have to be three relays of men at the treadmill or other appliances which would be used. Each eight-hour shift at each 10,000 horse-power engine would be 100,000 men, or 200,000 for the two engines. Three shifts of 200,000 men would give below decks a population of a city of second grade.

If the problem, moreover, were put in the form of a high-speed transportation, such as is represented by the locomotive condition, it disappears, practically in the field of the unthinkable. It needs, therefore, but a moment's consideration of the widespread significance which the railroad bears to the modern economic method to bring out the debt which the modern community owes to the motive power problem.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

Continued dullness is the characteristic feature of freight market generally. Grain charters are on limited scale and the fixtures effected during the past week do not show any improvement in rates. The supply of available tonnage exceeds, if anything, the demand, and whilst these conditions continue we cannot hold out any prospect of an improvement. There is no demand at the moment from the Atlantic cotton ports and from the Gulf there is likewise a scarcity of orders. A slightly increased business is perceptible in timber chartering, but in most cases owners have had to make concessions in rates.

Nothing of interest has devoloped in our market for sail tonnage since our last report, consequently rates remain nominally unchanged.

LONG TOWS FOR LIVERPOOL TUGS.

The Liverpool Steamtug Co.'s Blazer arrived at Monte-Video, last week, after a good run out. She is towing the French steamer Ville de Dijon from that port to Swansea.

The same company's tugboat Cruizer left Port Said on Monday ahead of Messrs. Bates' steamer Indra, which she is towing to this port.—Liverpool Journal of Commerce.

NOTES.

MR. A. E. Borie has been appointed general sales agent of Bethlehem Steel Co., with headquarters at South Bethlehem, Pa., the appointment dating from Feb. 1st., 1901.

THE Armstrong Cork Co., Pittsburgh, Pa., one of the most important and extensive industries in the country has just been burned out with an immediate financial loss of about a million dollars. The RECORD is not so informed, but, it is safe to say that the Armstrong Cork Co., will be filling their immense orders the same as usual within thirty days. As the firm had large agencies at all the chief cities it is probable that considerable stock is at hand to promptly fill hurry orders.

ALTOGETHER six war vessels are at present being built at the Union Iron Works, San Francisco, for the United States Navy. The largest is the battleship Ohio, which is 12,500 tons displacement, and is to be fitted with engines of 11,000 indicated horse-power. Next in size is the protected cruiser Tacoma, 3,200 displacement, the engines being intended to exert 4,500 indicated horse-power, the boilers in this vessel will be Babcock and Wilcox patent. Two torpedo destroyers and two submarine boats above mentioned are the others under construction. Two large cargo vessels, 7,760 tons gross register, a paddle ferry steamer, and another cargo steamer are also in progress.

THE British Admiralty are about to test the effect of fitting bilge keels on the torpedo-boat destroyers. A 30 knot vessel is to be selected, and she is to have her decks cleared of torpedo tubes and other obstructions in order to provide room for fifty men in addition to the crew. The boat is to be run without bilge keels at 15, 20 and 25 knots, and the men are to be so distributed as to produce the maximum of keel consistent with safety while the vessel is under way. The boat is then to be docked and provided with bilge keels, after which precisely the same trials are to be gone through. If it be found that there is no material depreciation of speed and manœvering power, bilge keels will be supplied to all the destroyers.

THE export of manufactures of iron and steel in 1900, amounted in value to $129,633,480, says the U. S. Bureau of Statistics. This value is exclusive of iron ore. In comparison, the similar export in 1890 amounted to a little more than $27,000,000; it was only $62,737,250 in 1897. The 1900 exports, in round numbers, amounted in value to: pig iron, 4,500,000; builders' hardware showed a gain of over 1,000,000 over 1899, and 2,000,000 over 1898. Steel rail exports of 1900 amounted to nearly $11,000,000; electrical machinery exported was worth $2,250,000; sewing machines, $4,500,000; and typewriters near $3,000,000. These exports went to over 20 foreign countries and states; but the United Kingdom and Germany absorbed about one half of the total.

THE Buffalo Forge Co. have recently placed upon the market an extremely novel folding forge, which by reason of its light weight and small compass, when knocked down and packed within its case, renders it a valuable article for army and navy use. The outside dimensions of the case into which it packs are but 22½x27½x10 inches. The forge is designated as the Buffalo Army and Navy forge, and as may be mentioned is in use in the Imperial Japanese Navy. The same company recently received a rush order for 100 of these forges for use in the United States Army in the Philippines. Owing to the necessity of shipping these forges on a certain transport only three days were given in which to fill the order, but the forges were completed and placed upon the transport in the specified time.

THE question in France is no longer as to the practicability of submarine navigation, but as to the comparative merits of the submarine and submersible vessel respectively. In the Moniteur de la Flotte, M. A. Rousseau points out that the submarine's radius of action is materially affected by the fact that, being propelled by electricity, she has, when the supply is exhausted, to return to her base. The submersible vessel, on the other hand, using steam while traveling on the surface, can partially apply her steam power to renew her store of electricity, thus extending the radius of action. Moreover, it is no slight advantage that while on the surface her crew are not shut up below, so that her condition as to habitability is materially improved. On the other hand, by reason of the necessity of changing from one form of propulsion to another, and other causes, she takes from seventeen to eighteen minutes to plunge, as against two minutes required by the Morse; but it is hoped to reduce the period materially in later vessels.

NEW SHAFTS AT THE GOGEBIC ORE MINES.

It is a matter of a comparatively short time, it is said, when all the shafts through which iron ore is brought to the surface on the Gogebic iron range will have to be abandoned. This is on account of the shafts having been sunk in the ore body, which caves as the ground is removed from beneath. Pillars of ore are always left to protect the shafts, but this has not proved sufficient, and it has already been necessary to abandon a number of them, and the remainder must go in the course of a few years if the present rate of mining is kept up.

The work of sinking the new shafts, which will thus be made necessary, will be a very expensive piece of business for the mining companies, costing them hundreds of thousands of dollars, and should the shafts at present in use cave unexpectedly, the mining operations on this range would be greatly retarded.

The Oliver Mining Company are already preparing for this expected emergency, and have commenced the sinking of a shaft at the Norrie mine in the foot wall—the wall of solid rock south of the ore body—through which they expect to reach the vein some time during the present year. This new shaft is the largest ever sunk on the Gogebic range. It will have four compartments, and will be supported by steel beams instead of wooden timbers. All the other shafts in the Lake Superior country have wooden timbers with the exception of one on the Vermillion range owned by the same company. This will minimize the danger from fire and prevent accidents caused by rotten timbers. It will require about a dozen similar shafts to provide hoisting facilities for the properties owned by the Oliver Company in Ironwood.

THE PANAMA CANAL.

The Engineer says: "Unfortunately for the Panama enterprise—and, perhaps, for the prospects of a trans-isthmian canal available on equal terms to the commerce of all nations—M. Hutin and his co-directors have completely failed to appreciate the significance of the phrase 'interests desired by the American people.' As the United States Commissioners very clearly indicate in their recently-issued report, the directors of the new Panama company afforded to those delegates who visited Paris and the works on the isthmus ample facilities for a scientific investigation of the undertaking and of the project for its completion, which has been described in earlier articles. The result of this is seen in a virtual admission that, so far as technical considerations are concerned, the Panama project is quite the equal of, if not superior to, that recommended for adoption. Panama, however, is placed out of the court by the fact that the Commission was appointed not only to determine 'the most feasible and practical route,' but also to state which canal could most readily be placed 'under the control, management and ownership of the United States.' Touching these to America, all-important points, the Panama directors have neglected to submit to the Commission or Federal authorities anything like a definite proposition which would give to the United States an undisputed right of way and clear title to the property. Indeed, as now appears, it is more than doubtful whether any such absolute transfer could ever be negotiated. Thanks to the peculiar circumstances of its incorporation—the lien which the creditors and shareholders of the de Lesseps company legally claim, that possessed by more recent creditors, and the generally-involved condition of its finances—the new company has found itself in the very unenviable position of being most anxious to sell, but so fettered as to be unable even to suggest a basis for negotiation. It is, therefore, not surprising that the latest American Canal Commission—'particularly in view of all the difficulties of obtaining the necessary rights, privileges and franchises on the Panama route'—has followed the example of its immediate predecessor, and reported in favor of a rival scheme."

STEEL GRAIN ELEVATORS.

The MacDonald Engineering Co. has contracted to build at Chicago for Nye, Jenks & Co. an absolutely fireproof steel elevator of 1,300,000 bushels capacity, in which there will be no wood whatever. The elevator will consist of eighty steel bins, set on steel posts of immense strength, each encased in concrete. Not only will these bins hold grain but some of the concaved triangles formed by their contact will do so, emptying at the bottom into the circular bins. The machinery of elevation, etc., will be carried in others of these triangles. Under this patent method of construction, the six lines of contact between each circular bin and those adjoining it will form a riveted steel beam, four times as thick as the wall of the bin. The floor below will be concrete arched between abutments. On the top of the bins, nearly 100 feet in air, will be a second floor of concrete, where the work of the house will be carried on. The roof will be steel. When railroad cars, wheat laden, run into the building, there will only be as much wood therein as is in the cars. To preclude the possibility of fire from this trifle, a complete system of automatic sprinklers will be placed over the tracks. The machinery will be run by rope drives from an engine and shafting in a nearby building.

This elevator will cost 30 cents per bushel capacity; wooden houses do not cost less than 25 to 40; while a steel rectangler-binned elevator of 3,000,000 bushels being built at Duluth by the Great Northern road is costing about 70 cents per bushel. When the Nye-Jenks elevator is completed and filled with wheat there will be a weight of 75,000 tons set up on posts, with its base twenty feet above the ground.

A BATES DREDGER IN THE SUEZ CANAL.

To the Editor of the Marine Record.

Reading an article in a recent number of the RECORD descriptive of one of my son's dredges built for the government of Queensland, Australia, I noted that the writer said this dredge, the Hercules, would output 2,500 cubic yards an hour. At the request of the directors of the Suez canal, and by consent of the Queensland government, this dredge stopped a few days in the canal to test her powers in actual work, it being the intention of the canal directors to widen it 100 ft. very soon, and, it being desirable to learn just what this dredge could do if employed upon this job.

My son, Lindon W. Bates, wrote me on January 3rd last, that he had made a record of 2,600 cubic yards in very hard yellow clay, which was a performance just thirty times the work of the dredges now used by the Suez Canal Co. It is only with the inventions of Mr. Bates that such a result is possible, especially when we consider that the "spoil" is deliverable at points of 1000 ft., or greater distance, from the dredge. Scotch engineers used to lead the way—are they being eclipsed by American engineers?

WM. W. BATES.

A SPLIT IN THE SEAMEN'S UNION.

Chicago is and has been for years past, the center and head-quarters of the Lake Seamen's Union, this principally because the lumber trade has been carried on by schooners, and that more vessels sailing under canvas traded on Lake Michigan than any other lake, and their crews were principally unionists.

At the convention of the Lake Seamen's Union, held several months ago, a resolution was adopted declaring that members holding political offices are no longer eligible as members, and accordingly a couple of the shining lights are in great danger of being eclipsed.

Richard Powers, identified with the union for upwards of twenty years, and one of the founders thereof, now holds a political office, and therefore stands for expulsion, so also does Thomas J. Elderkin, both of Chicago, and chronic office holders in the union. The lake seamen of Chicago have already elected successors to the two delegates in the Chicago Federation of Labor, so they will not be seen there again for some time.

It now appears that the courts have been appealed to and an injunction applied for as a means of restraining the union from expelling them as members. Messrs. Powers and Elderkin, however, declare that they are perfectly justified in using this legal means of protecting themselves against what they consider the unlawful action of their own union in expelling them as members because of the fact that they are political officeholders.

Richard Powers expressed his indignation against the action of the union, and said that it had been directed against himself and Elderkin merely as a piece of spite work.

"The union had no right to take the action it did," said he: "and I am confident it will not be sustained. The action is contrary to the constitution of the union, and is illegal on the face of it. There are a dozen other men belonging to the union who hold political offices just as much as we do, and they have never been disturbed. I have been a member of that union since 1878, and have done everything in my power to bring it up to what it is to-day, and I do not propose to be dropped out of it without making a fight."

It is said that if the two members of the union lose their suit in the circuit court the result will be a split in the Lake Seamen's Union and the formation of a rival organization known as the Lake Seamen's Federation.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Shipping.—A stipulation in a bill of lading for goods carried by ship, that all claims for damages against the steamship company or its stockholders must be presented within thirty days, applies to a libel against the ship itself, as well as to claims in personam against the owners. The Queen of the Pacific, 21 Sup. Ct. Rep. (U. S.) 278.

Stipulation—Course of Dealing.—Where, in an action on a policy of marine insurance, it was contested whether the agent who issued the policy was the agent of the company or the insured, and the company requested no instruction as to what would constitute the agent of the company, it was not error to fail to instruct on the question. Insurance Co. of North America vs. Bell et al., 60 S. W. Rep. (Tex.) 262.

Stipulation Limiting Time for Claims for Damages to Goods.—A stipulation for notice of any claim of loss within thirty days from date of shipment, in a bill of lading for goods carried by ship from San Francisco to San Pedro, is not unreasonable as applied to a loss which was known to the consignors more than three weeks before the expiration of the stipulated time, since the enforcement of the stipulation in such a case would not work a manifest injustice. The Queen of the Pacific, 21 Sup. Ct. Rep. (U. S.) 278.

Marine Insurance—Stipulations.—Where an open policy of marine insurance contained a stipulation that risks covered by it should be advised, as soon as known to the insured, to the company of its home office, by telegram or letter, but in numerous cases under the policy the notice was not sent by the plantiff, but by the company's agent when application was made to cover a shipment, and that the company had always accepted such risks and the premiums therefor, and had paid losses thereon, without objecting that plaintiff had not advised them of the risk, such course of dealing constituted a waiver of the requirement of the stipulation, and estopped the company from setting up plaintiff's failure to advise as a defence to a claim for a loss. Insurance Co. of North America vs. Bell et al., 60 S. W. Rep. (Tex.) 262.

Insurance Agent—Apparent Authority.—The course of dealing between a cotton broker and an insurance agent, under an open policy of insurance, was that the broker, on receipt of an order to buy cotton, would notify the agent to insure a certain number of bales provisionally, whereupon the agent would accept and notify the company, and when the cotton was bought and ready for shipment in the interior the agent would issue certificates covering it from the date of purchase to the end of the voyage. The company had accepted premiums earned, and paid losses incurred, by insurance effected in this manner, for some time previous to the transaction in suit. On October 24 the broker requested additional insurance on a lot of cotton then in transit, which risk the agent accepted, promising to issue the certificates as soon as he got time, the risk to be covered meanwhile. The agent stated then that it was unnecessary to notify the company, and did not do so until he issued the certificates, on December 15, on which day the cotton was lost in a wreck, and on which day the premium was paid, the fact of the loss being then unknown. Held, that the agent's acts in the matter of the insurance in question were within the apparent scope of his authority, and binding on the company. Insurance Co. of North America vs. Bell et al., 60 S. W. Rep. (Tex.) 262.

A WRONG IMPRESSION—A CANARD.

Under the caption of "Build Ship Around Engines," and a sub-head reading "One of the Difficulties Attending Construction of New Lake Built Steamers," the following appeared in a recent issue of the Brooklyn, N. Y., Eagle, a marked copy of which was mailed apparently for our edification:

"The lake built steamers Waccamaw, Eureka and Tampico have developed one serious defect, which has entailed much trouble and cost in repairing the Eureka. The engines are located aft and the distance to the stern frame being very short the thrust and tail shafts are combined in one section.

In the event of a broken propeller, there is no provision for hauling the shaft inboard for repair or examination. In ordinary steamers there is always one short section, which can be uncoupled and rolled out of the way. When the Eureka's shaft came to be hauled inboard this condition was absent. As one of the machinists put it:

"'The engines were first built and then the ship was built around the engines.'

"To take off the propeller it was found necessary to cut the tail shaft in two and then detach the crank shaft from the engines and hoist it clear out of the way to permit the severed shaft being drawn inboard. Couplings had then to be made for the inboard severed end, as well as for a new tail piece. These couplings and their flanges had to be treated in charcoal fires and shrunk on the ends of the shafts, just as the jackets are shrunk on heavy guns."

The foregoing is not true of the Tampico and Waccamaw. As regards the Eureka, it was not intended, when the order for her construction was placed that she should go outside the Gulf of St. Lawrence, and therefore lake practice ruled. From the tenor of the item, lake tonnage is not looked upon from an unprejudiced standpoint by the Brooklynites. Just 'bide a wee" until the next half dozen fleets are sent to the coast from lake shipyards, and then, perhaps, there will be found something in their construction and equipment to copy them after. No, we are not quite yet building new ships around an old hull's stern tube.

MARINE RECORD

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CLEVELAND, O., FEBRUARY 14, 1901.

THE shipping bill is still being used as a club menacing the passage of the river and harbor bill in the Senate, get together legislators, and diplomatic business men in statesmanship, so that in the brief time now at your disposal the country may be given the best legislation possible, in a word, pass the shipping bill.

THE next that we have to do in Chicago is to get the Federal government to take charge of the drainage canal as one of the links of the Michigan-Mississippi ship canal. None of the other lake cities can get the general government to handled or become interested in its municipal sewerage, but the "I will" of Chicago forever wins.

JUST as soon as the ice goes out in the spring the remedial works in the rapids at Sault Ste. Marie will be started by the Michigan Lake Superior Power Co. They will consist of submerged weirs, formed of cribs, with surface sluices. The cribs will be bolted to the solid rock. The company will probably do the work itself. The obstruction will cost about $300,000.

WHILE freights will evidently start out much lower this season than last, there does not seem to be a very eager disposition evinced among the several labor unions interested to modify charges for loading and discharging. The marked and positive features, which we can see in this direction, makes for the practical application of more labor saving devices and a less demand for the requirements of labor wherever possible.

TO THOSE who are desirous of getting a bill through Congress entitling the master of a vessel to be called Captain, we recommend the following string, with the exception, that it's British, you know: "Capt. Horatio McKay, hon. lieut. R. N. R., Commander of the Cunard R. M. S. Lucania." This is surely handle enough to any shipmaster's name, even for the commodore of the Cunard line. Capt. T. Dutton has relieved Capt. McKay for a couple of trips.

THE lake districts have lost this year by transfer to other posts, two energetic and well-advised engineer officers, in the persons of Lieut. Col. Jared A. Smith, Cleveland, and Major Clinton B. Sears, Duluth. The lake community generally regret the necessity for the changes, but orders are orders when issued from the War Department, and it is the duty of the rank and file to be ever ready to strike and fold their tents when orders are given to march to other scenes and pastures new. Lieut Col. Smith has been ordered to the Pacific Slope and Major Sears to the Philippines.

LONDON LLOYD'S are to be taught a lesson. The unjust discrimination practiced by underwriters at Lloyd's, anent the St. Lawrence gulf and river trade are to be nipped clean short, brought up with a round turn, all standing, as it were. The gentlemen who are ready to risk thousands of dollars on the turn of a hair, won't give the British North American ports a fair show in insuring ship, freight or cargo, consequently a home insurance company is to step in and take the risks, thus ignoring Lloyd's altogether, though we suppose their register will be glanced at relative to a vessel's class, etc. It is now learned that the extensive and influential firm of Elder-Dempster & Co., London, cabled D. W. Campbell, the Montreal agent, that if the proposed Canadian Marine Insurance Co. is started their firm will take stock to the extent of $250,000. The firm also comments on the the project very highly. Furthermore, the Montreal grain men have been notified that the New York Produce Exchange has decided not to debar Montreal and other Atlantic ports from the tests for grain shipments. There is no doubt but that the North American trade is a hard one in the spring and fall of the year, also, that it always will be, but much can be done to make navigation safer than it has been and this the St. Lawrence interests have set about to do, with Mr. Dobell as one of the moving spirits. There is a lurking and perhaps well founded belief that the British underwriters are prejudiced from away back against the North American trade, and hang on to their notions with that dogged pertinancy so noticeable among their countrymen, however, they can probably do business at the old stand without crawfishing for the St. Lawrence trade, and, if so, they will give others a chance to see what's in it. There is such a thing as becoming fosilized in a business rut. There is also a chance of introducing a system to meet modern requirements in the insuring of North American adventurers.

AS was to have been expected, the Seamen's Union can only see a harmful project in the continuous service and beneficial insurance offered by the members of the Lake Carriers' Association to their employes. The Coast Seamen's Journal, San Francisco, is somewhat bitter in its denunciation of the scheme and this has been followed up by action taken in Chicago condemnatory of every feature of the proposed departure. We should judge that the Seamen's Union on the Pacific Slope is a strong, well advised and skillfully conducted organization of coast sailors, an excellent journal exclusively in their interests is published weekly at 'Frisco and all branches or local lodges meet regularly, etc. The conditions are very different on the Lakes and becoming more widely so each successive season. Marlinspike sailors are not wanted, deck hands for tow barges and even steam barges are made out of roustabouts and just common ordinary fresh water laborers. These men, or class of men, would not be acceptable to a union of skilled workmen, hence, the benefits denied elsewhere, are held out, or likely to be, by the employers of this nondescript body of men, who, being partly assisted, place themselves in the line of benefits, which would not otherwise accrue. We are not aware, that with all the mint of money poured into the coffers of the Lake Seamen's Union in the past, that there ever was an insurance fund or any great benefits derived by the sailor therefrom. The Pacific Coast or International Seamen's Union may not have such a fund in working order today, and we rather think not. The recent action, therefore, of the Lake Carriers' Association, may be the means of originating and developing such a system in the coast service, and if so, much good will have been accomplished in that direction, but it is too late in the day to talk of a lake seamen's union, because there are no seamen to unite.

NOTWITHSTANDING the powerful syndicates, combinations of tonnage and concentration in the lake carrying business of certain products, there will always be room for the individual or minor vessel owning interests. History repeats itself, nowhere in the world are larger lines of tonnage to be found than there is under the British flag, they have almost become scavengers of the coasts, islands, rivers, etc., also mark, that never was there known to be such a list of free tonnage, general cargo boats, "tramps", if you will; moreover, these free to charter, salt water churners, frequently carry off a bigger coating of gilt on their gingerbread, passage for passage or voyage for voyage, than many of the line boats, in fact, line boats are frequently more expensive to handle than tramps are.

THE Supervising Inspector General of the United States Steamboat Inspection Service and his board of Supervising Inspectors have again been euchred on the granting of licenses question. For a long series of years all licensed officers presented themselves annually befor e the local inspectors of steamboats and duplicated their previous year's license. More recently, the period of renewal was extended to five years. Eventually, the brilliant idea dawned upon the consciousness of the department that it would occupy a portion of the local inspector's leisure time, besides consuming some of the clerkly energy displayed in their offices, and incidentally use up a few thousand dollars here and there, if a re-examination was made compulsory every fifth year. While the Board of Supervising Inspectors of Steamboats were in annual session assembled at Washington last month, the master of one of our daily passenger boats on Lake Erie stepped along to Washington and scotched the re-examination bugbear. Well done Mac, it takes a Scotsman to scotch the machinations of these antediluvian fossils hedged around with all the majesty of the Treasury Department. By the way, we understand that the entire service throughout the United States was conducted at a saving of some thirty-six dollars less than the expenditure of last year. This is indeed worthy of the continuance in office of all hands, p'raps another thirty-six can be saved next year if only in the cost of stock for officers' licenses.

THE names of officers licensed over a year ago may soon be issued in departmental form by the Steamboat Inspection Service, then again it may run on until next July before the public printer can complete his composition of this secret intelligence. Local inspectors of steamboats, on the peril of their positions, dare not divulge the name of a successful candidate passing a voluntary examination, until the same has been published at Washington. One would think that the Inspector-General would be only too pleased to see these names announced from time to time, if only to show that his locals were keeping the field well supplied with licensed officers. Why this thusness of endeavoring to conceal the nigger in the woodpile, ain't Denmark all right?

SHIPPING ENTITLED TO SUBSIDY.

The Secretary of the Treasury has made reply to the resolution of the Senate of the 11th inst., concerning the shipping of the country as affected by the ship subsidy bill by sending in a report from the Commissioner of Navigation. The statement includes a complete list of the merchant vessels of the United States, the total being placed at 23,333. Of these 1,330 aggregating a gross tonnage of 826,694 tons, are registered for the foreign trade, while the vessels licensed for the coasting trade number 22,003, of 4,338,145 gross tons.

The Commissioner says there is no legal obstacle to any of these coastwise vessels of more than thirty tons entering the foreign trade, but that the length of the canal locks would prevent many of the larger of the vessels of the Great Lakes from passing to the sea. For this and other reasons he finds it impracticable to state the number of coasting vessels likely to be registered for the foreign trade under the shipping bill. The number of American vessels in the foreign trade eligible to subsidies under the bill is placed at 1,331, of which 964 are sailing vessels.

It is also stated by the Commissioner that the amendment to the bill relating to the additional subsidies to be paid to 20 and 21 knot vessels will have the effect of reducing the subsidies payable on voyages of the St. Louis, St. Paul, Paris and New York included in the tabulation by the sum of $221,106.

The Commissioner states that it is impracticable to ascertain the full extent to which American capital may be invested in steamships under the foreign flags to the extent of owning a majority interest. There are 42 ships registered as contracted for to be built prior to Feb. 1, 1899.

PISICULTURE.

Fishermen and in fact all citizens residing at lake ports will be interested in the announcement that 200,000,000 whitefish will be distributed in the Great Lakes from the Michigan hatcheries during the coming season. In addition to these, the same hatcheries will distribute in larger streams of Michigan 7,000,000 brook trout, 3,000,000 lake trout, 7,000,000 black bass and 100,000,000 wall-eyed pike. The work of planting fish is as interesting and about as important as any in the line of preserving an industry which is paid for out of public funds.

A SUCCESSFUL MECHANICAL STOKER.

A mechanical stoker has worked so successfully that it is to be applied to four other large steel freighters now under construction at yards of the American Ship Building Co., for the Peavey Steamship Co., of Duluth. In the case of the steamer J. W. Gates an elaborate test was conducted last season to ascertain the value of the stoker, and it is claimed that results showed only one and five-tenths pounds of ordinary slack coal burned per indicated horse-power per hour for all purposes. The stoker is said to produce no smoke. It consists essentially of a set of grate-bars carried from front to back of furnace over a number of fairleaders by two endless chains, one on each side of the furnace. At the back of the furnace the chains and bars pass over a drum, and thence back over fairleaders to the front of the furnace again. At the front of the furnace the chains pass over sprockets, from which they receive motion. The bars each have two wrought-iron lugs on the lower edge, which hook into the chain, alternate bars hooking in from opposite sides. The upper faces of the bars are toothed and locked into each other, leaving sufficient opening to form air spaces for burning the coal. From this construction it is evident that a bar can only be removed and replaced when it is passing over the sprocket wheel in the front of the furnace, for at no other time will the teeth be entirely disengaged from each other. The sprockets at the front of the furnace, which give motion to the chains and bars, may be driven by any suitable device, but as the motion is very slow worm-gearing is best adapted for this purpose, the worm-gear being driven by a small oscillating engine immediately above the box containing the gearing, thus making a very compact and simple arrangement. At the front of the furnace, also, a hopper extends the whole width, into which the coal is shoveled. On the boiler front, and forming the back of the hopper, is a distributing and regulating plate, which extends across the full width of the grate, and is carried above it to whatever thickness is desired to carry the fire. At the front of the furnace, and extending back about one-third the length of the furnace, is a brick arch, and at the back there is an apron-plate through which there are a number of openings to allow a supply of air to enter over the fire. The speed of the bars from front to back is so regulated that coal shall be entirely consumed in the passage, and the speed will, of course, vary with the draught and thickness of fire carried. The ashes and clinkers are dumped into an ashpan at the back end of the furnace.

DIVIDEND POSTPONED.

The officials of the Great Lakes Towing Co. have decided to pass the next dividend. The stockholders of the company yesterday received a letter notifying them of the action. It follows in part:

The stockholders will be pleased to learn that, in spite of a bitter competition during the past season, the results of the company's business up to Dec. 30, 1900, show a net profit of $220,046.96 and after paying all repairs, fit out, operating and other expenses and 7 per cent. dividend on the preferred stock, leaves a net undivided profit of $90,504,97.

The company is, therefore, abundantly able to continne paying its quarterly dividend of 1¾ per cent. on its preferred stock. The directors, however, deem it important that the company should keep itself abundantly strong to enable it to continue its active fight against this competition, and they have, therefore, concluded to postpone the payment of any dividend until they can determine if it will be necessary to meet and overcome any such opposition next season. The directors feel sure that the stockholders will agree with them in this conclusion. We expect to pay the full 7 per cent. dividend on the preferred stock the ensuing year, and have only determined to postpone the commencement of such payments for the reasons stated in this circular.

SUIT AGAINST IRON COMPANY.

The Lake Superior Consolidated Iron Mines has begun suit in the United States Court at Pittsburg against the Salem Iron Co., of Leetonia, O., for damages resulting from the alleged failure of the defendants to carry out certain contracts relating to the purchase of Mesaba range ore.

The plaintiff has filed a statement setting forth that the Salem Iron Co. made a contract with it whereby the latter agreed to buy 30,000 tons of iron ore at $4.85 a ton. The ore was to be taken from the Mesaba range mines of the Lake Superior Consolidated to some port on Lake Erie, where it was to be transferred to some railroad. The gross amount of the purchase price, $145,500, was to be paid in twelve installments, but the plaintiff declares that the Salem Iron Co., after accepting and paying for 2,543 tons and 1,030 pounds of the ore, refused to take the remainder, which had already been delivered at Lake Erie.

The Lake Superior Consolidated claims that it was impossible to dispose of the ore to any other party at that time. The plaintiff demands damages to the amount of $48,048.

The Commonwealth Iron Co. has a similar suit against the Salem Iron Co., asking judgment for $43,283.

COST OF AN ERIE BARGE CANAL.

Senator Henry W. Hill, State Engineer and Surveyor Bond and a few of those who are interested in the improvement of the Erie canal, held a conference with Gov. Odell on Wednesday in the legislative chamber with reference to the proposed canal legislation.

At the meeting was presented a partial report of the state engineer, who, it is understood, has roughly estimated the cost of a lake route canal and the barge canal project. The former, it is thought, cannot be accomplished under $52,000,000 and the latter not under $87,000,000.

The governor, so far as can be learned, did not commit himself further than to say he would desire more figures and facts before entertaining any specific project. All the parties are reticent about talking on the subject and it is doubtful if any formal action will be taken within ten days.

THE CHICAGO CUP DEFENDER.

The Chicago defender, the Illinois, which is being built down east from designs by Crowninshield, is now planked, the deck beams are in, and the work of fitting out the cabin will begin this week. She is doubled planked, with Spanish cedar for the outer course. She is built under a girth rule and is to sail in the trial races from which a boat is to be selected to defend the Interlake challenge cup, now held by the Chicago Yacht Club.

She is about three feet longer than the Flirt, of about the same beam, with less draught, on a greater overall length. She has some of the elements which are noticeable in the Lawson boat, although the length of floor is not carried ou to such a radical extent.

The boat should be completed within a month, and with the lead keel and wooden fin off her, she will be placed upon platform cars and sent to Chicago, where the lead keel and wooden fin will be refitted.

The Hanley boat Genesee defended the cup last year, and there will be great interest to see how the centreboard Genesee comes out with the Illinois, both built under a restricted rule, as agreed upon by the yacht clubs of the Great Lakes

BUFFALO HARBOR RULES.

The text of the bill introduced in the House of Representatives last week, relating to the anchorage and movement of vessels in the port of Buffalo, is as follows:

"That the Secretary of the Treasury be authorized and directed to define and establish anchorage grounds for vessels in the harbor of Buffalo and waters adjacent thereto, to adopt suitable rules and regulations in relation to the same and to take all necessary measures for the proper enforcement of such rules and regulations.

"That in the event of the violation of any such rules or regulations by the owner, master or person in charge of any vessel, such owner, master or person in charge of such vessel shall be liable to a penalty of $100 and the said vessel may be holden for the payment of such penalty and may be seized and proceeded against summarily by libel for the recovery of the same in any United States district court for the district within which such vessel may be and in the name of the officer designated by the Secretary of the Treasury."

This measure is the result of representation made by the shipping interests on the lakes, which are suffering more and more seriously with the growth of commerce at Buffalo and the consequent crowding of the harbor.

FILED A DEMURRER.

The Maytham Towing and Wrecking Co., of Buffalo, through its attorneys, Potter & Wright, has filed a demurrer to the complaint of the Great Lakes Towing Co., in the action brought to restrain the Maytham company from engaging in the towing business of the lakes. Twenty-four days ago the Great Lakes Towing Co., served its complaint. It is alleged that the owners of the Maytham Towing and Wrecking Co., had sold out previously to the Great Lakes Towing and Wrecking Co. and had pledged themselves not to engage in the towing business for a specified term of years thereafter.

Instead of an answer to the complaint the defendants filed a demurrer. It alleges the complaint is defective and does not contain sufficient facts to constitute a cause of action. The demurrer will be argued in the special term of the supreme court possibly next month. Rogers, Locke and Milburn are attorneys for the Great Lakes Towing Co., with John G. Milburn and Harvery D. Goulder and James H. Hoyt of Cleveland as counsel. The argument on the demurrer will be on the question of law.

Marine men, vessel owners and lawyers all along the lakes are watching every development in the matter with great interest.

NAVAL NOTES.

THE new American navy will have cost $310,000,000, when the vessels now authorized are completed, says Mr. Cannon, Chairman of the Appropriation Committee of the House.

THE torpedo-destroyer Bailey built by the Gas Engine & Power Co., and Charles L. Seabury Co., of Morris Heights, N. Y., attained a speed of 30.88 knots on an official trial trip at Newport, on Jan. 17. The contract speed was 30 knots.

THE battery for the seven new battleships has been decided upon by the Board of Construction, and it is claimed to be the heaviest afloat. It will include four 12 in. and four 8 in. guns in two superimposed turrets, and sixteen 6 in. rapid fire guns in broadside. Twelve of the 6 in. guns will be placed on the main deck on a level with the 12 in. guns; and four more 6 in. guns will be located over the four corner guns in armored casemates. The new 6 in. gun has a length of 50 calibers, and with the smokeless service powder its 100 pound projectile will have a muzzle velocity of 3,000 ft. per second, and it can be discharged three times a minute. It is claimed that this shot will perforate 5 ins. of the best Krupp armor at two miles range, and more than 6 ins. at one mile. The arrangement adopted saves 300 tons in weight of armament and armor, and this will be added to the coal-bunker capacity, adding 1,800 miles to the cruising radius of these seven 15,000 ton battleships. Five of these ships have already been contracted for, and the other two are provided for in the present Naval bill.

BIDS for three protected cruisers were opened at Washington on Feb. 1. They were: Neafie & Levy, of Philadelphia, $2,740,000; Newport News Ship Building Co., $2,741,000 and the Bath Ship Building Co., $2,750,000. The Newport News Co. proposes to build a 9,700-ton cruiser on its own plans, for the sum named, in 36 months. The Bath Co. propose practically the same terms. The Wm. R. Trigg Co., of Richmond, rejected the $50,000 reservation fixed by the Department to cover the cost of placing armor on the cruisers, and propose to build one cruiser for $2,780,000 on somewhat modified plans, or two cruisers for $2,740,000 each. Neafie & Levy Co. presented its bids on the Department's plans though it ommitted automatic water-tight doors, bronze pilot house, and some other items named. These new ships will be named the St. Louis, Milwaukee and Charleston, and are to be the most formidable vessels of their class afloat, in ordnance, speed and cruising qualities. Their total displacement will be 9,700 tons each, and they will be equipped with 21,000 I.H.P. with twin screw engines and have a speed of 22 knots. They will be 424 feet long and 66 feet extreme beam and will carry 1,500 tons of coal.

THIS from the Door County Democrat, Sturgeon Bay, Wis., under date of the 9th inst: "The lights on Dunlap reef in this bay continue in operation, although a foot of ice covers the bay and the last boat went through on Christmas day. Keeper Clifford Sanderson received notice last fall to keep the lights burning until further notice. This was on account of the probability of the Algomah running throughout the winter. The lights at the Menominee harbor, Chambers and Green Islands are also burning, uselessly, consuming barrels of good oil, which is extravagance of an inexcusable kind on the part of Uncle Sam." The district officer of the light-house service was probably not informed of the discontinuance of the ferry service, and in any case it takes a few weeks to transmit reports to Washington, receive instructions in reply, etc. It is charming, however, to notice with what interest the Democrat views the national expenditure of a few barrels of good oil and the inexcusable extravagance attached thereto. Large bodies move slowly and the Light-House Board is by no means an insignificant department of the country's service.

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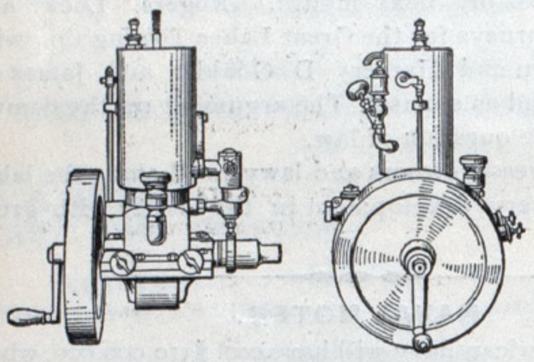

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WIRELESS TELEGRAPHY.

A new system of wireless telegraphy has been developed by the U. S. Weather Bureau.

It is a success, said Willis G. Moore, chief of the Bureau. "We have been experimenting for a year at Cobbs Island, in the Potomac river, 70 miles below Washington.

"We have completed an apparatus that we expect will enable us to signal ships 500 miles or more out to sea. We shall soon send out ships equipped with receiving instruments. We have just completed a station at Roanoke, N. C., and will soon have stations at Hatteras and Cape Henry.

"We have succeeded in telegraphing perfectly with our wireless system for 60 miles over a rough country around Washington. That, I believe, is fully equal to the best transmission that has ever been accomplished by the Marconi method. Our system is quite distinct from his, and is being developed along our own lines.

"We succeeded in sending messages for some distance from a staff only three feet high. We established regular communications between the laboratory and Washington, 60 miles. One of our men has a farm near Fort Myer, Va., just across from Washington. A staff 100 feet high was on the place, to communicate with the island as regularly and as freely as though we were working over a wire. The speed of the waves was practically that of light.

"We used a system of dots and dashes and our receiver was of the 'Sounder' type. We read messages by sound. We expect, however, to develope a receiver that will record messages. Notwithstanding our success, it does not seem that wireless telegraphy is developed yet to the point where it can be used for ordinary commercial purposes on land. The earth disturbances and conditions that surround cities would prove obstacles."

THE SCHERZER ROLLING LIFT BRIDGES.

Now that there are several ports on the lakes figuring on the best kind of bridges to span their rivers, a work on this subject, just issued in Chicago, ought to be of immediate and future interest.

The volume is a cloth-bound album 11x14 inches in size, containing a large number of finely executed 7x9 inch photogravure engravings of Scherzer rolling lift bridges erected in various places within recent years. Published by the Scherzer Rolling Lift Bridge Co., 1616 Manadnock Building, Chicago. Price $10. This is the second edition, revised and enlarged, the first edition having been issued three years ago. Aside from the very fine illustrative features, about 70 pages are devoted to the subject of "Movable Bridges" in general. The treatment is in part historical, starting with the bascule bridge of mediaeval times and following progress of construction up to the present time. One purpose of this treatise is to show by comparative illustrations and data, that the rolling lift bridge is not only the most economical structure but the best adapted to the conveniences of modern travel and traffic. Introductory to the treatise is a quotation from the address of President Jno. F. Wallace before the annual meeting of American Society of Civil Engineers, in London, England, last summer, to the effect that "The best engineer is not necessarily the one who will design and construct an elaborate bridge across a mighty river, but the one who will design and construct such a bridge so as to give the greatest amount of facility for transportation over it at the least possible expense."

The album also includes a discussion of the various schemes resorted to for taking street and railway traffic across navigable rivers, such as subways, tunnels and high-level bridges, with the various advantages and disadvantages as compared with a Scherzer rolling lift bridge. The susceptibility of a bridge of this type to artistic features of design is shown by a pleasing drawing of a proposed improvement to the Chicago harbor with a rolling lift bridge across the Chicago river, in the foreground. Mr. Albert H. Scherzer, president of the Scherzer Rolling Lift Bridge Co., is the author of a recent paper on "Chicago Harbor Improvements," which has attracted a good deal of interest. This paper, appropriately illustrated, is reprinted in the album.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	2,715,000	13,000	45,000	55,000	862,000
" afloat	1,014,000	.....	162,000	.....	.....
Chicago	11,444,000	3,529,000	3,090,000	590,000	271,000
" afloat	57,000	314,000	1,204,000	.....	.....
Detroit	464,000	512,000	.....	34,000	27,000
Duluth	7,216,000	2,693,000	957,000	294,000	75,000
Fort William, Ont.	1,387,000	.....	.....	.....	.....
Milwaukee	1,019,000	584,000	849,000	1,000	25,000
Montreal	99,000	13,000	128,000	9,000	41,000
Port Arthur, Ont.	250,000	.....	.....	.....	.....
Toledo	565,000	1,711,000	266,000	9,000	.....
Toronto	50,000	.....	2,000	.....	4,000
On Miss. River	.....	.....	.....	.....	.....
Grand Total	58,494,000	16,050,000	10,290,000	1,205,000	1 779,000
Corresponding Date, 1899	53 805,000	14,709,000	5,968,000	1,119,000	1,506,000
Increase	.....	1,225,000	361,000	10,000	.....
Decrease	1,273,000	.....	.....	.....	94,000

While the stock of grain at lake ports only is here given the total shows the figures for the entire country except the Pacific Slope.

THE Engineering Magazine for February, following the great works management number which appeared last month, admirably sustains the interest in the practical modern science of industral engineering which it has made its peculiar field. The leading place is given to Mr. A. H. Ford's illustrated article on Russia's internal waterways—the first of a series on the striking development of trade and manufactures in that great empire.

Winter Moorings

A small book of about 32 pages, containing alphabetically arranged lists of steam and sail vessels, also tugs, showing where each one is located for the winter. This little booklet may be had by enclosing 10 cents in stamps to

The Marine Record Publishing Co.

WESTERN RESERVE BUILDING,
CLEVELAND, OHIO.

CANADIANS ASKED TO ADOPT "RULES OF THE ROAD."

A deputation from the Lake Carriers' Association waited upon the Dominion deputy minister of marine this week and urged that a union "Rule of the Road" be adopted by United States and Canadian shipping on the lakes, especially in regard to fog signals and lights at the masthead. It was also asked that the lighthouse recently destroyed by fire on the Southeast shoal in Lake Erie be rebuilt as speedily as possible and that telephone connection be established between Long Point light and Port Rowan harbor of refuge. The deputation included Capt. Geo. P. McKay, of Cleveland, chairman of the committee on aids to navigation; Capt. Gaskin, of Kingston, representing the vessel owners; and Capt. Donnelly, of Kingston, acting for the Underwriters' Association of Canada.

THE CHICAGO LAKE LINE AGENTS' ASSOCIATION.

At a special meeting, held Friday, the 8th inst., the association adopted the following preamble and resolutions on the death of Capt. James S. Dunham, a worthy member of the organization:

Whereas, it has pleased a divine providence to take from our midst our esteemed and beloved fellow member, Captain James S Dunham, long and prominently identified with marine affairs, and this association having received news of his death with profound sorrow and regret, it is

Resolved, that this association, deeply recognizing the ability, uprightness of character and lovable qualities of the deceased, and feeling that as a friend his place cannot be filled in our hearts, and that we have lost an associate whose counsel was of great value to us, desire to make known in this way their deep sorrow at his loss, both as a business associate and friend; and it is further

Resolved, that we extend to the members of his family our most sincere and heartfelt sympathy in this, their hour of great sorrow and overwhelming bereavement; and be it further

Resolved, that a copy of these resolutions be presented to them.

T. T. MORFORD, President.
By J. C. EVANS, Secretary.

OFFICIALS OF MICHIGAN STEAMBOAT LINES FOR THIS YEAR.

J. Emory Owen Transportation Co.—President, J. F. Owen; vice-president and treasurer, W. J. Gray; secretary, Ross Wilkins; directors, Ross Wilkins, W. J. Gray, and J. F. Owen.

Parker Transportation Co.—A. A. Parker, president and general manager; A. R. Munger, vice-president; B. W. Parker, secretary and treasurer. The officers, with F. B. Gaylord and John S. Quinn, are directors.

Pridgeon Transit Co.—John Pridgeon, Jr., president; John S. Quinn, vice-president; B. W. Parker, treasurer; A. A. Parker, secretary and manager. These officers, with A. R. Munger, are directors.

Peninsular Transit Co.—A. A. Parker, president and general manager; W. H. Oades, vice-president; Harry S. Hodge, treasurer; B. W. Parker, secretary. The officers with A. R. Munger, are directors.

Inter-lake Transportation Co.—P. J. Ralph, president; C. D. Waterman, vice-president; H. C. Ralph, secretary and treasurer.

Teagan Transportation Co.—William Teagan, president; J. O. Teagan, secretary and general manager.

State Transportation Co.—John Pridgeon, Jr., president; Joseph King, vice-president; B. W. Parker, treasurer; A. A. Parker, secretary and general manager. The officers are directors.

Stewart Transportation Co.—Geo. Peck, president; A. E. Stewart, vice-president and general manager; C. F. Bielman, secretary and treasurer; George H. Lesher, general counsel. These, with John J. Barlum are directors.

Ionia Transportation Co.—F. M. Thompson, president, treasurer and general manager; E. L. Thompson, vice-president; W. W. Kelly, secretary. The officers are the directors.

Thompson Navigation Co.—E. L. Thompson, president; C. A. Chamberlin, vice-president; F. M. Thompson, treasurer; R. H. Phillips, secretary. The officers, except the secretary, are directors.

Buffalo & Duluth Transportation Co.—W. C. McMillan, president; W. K. Anderson, vice-president; B. W. Parker, secretary; A. A. Parker, treasurer and manager. These officers and T. H. Newberry are the board of directors.

Duluth & Atlantic Transportation Co.—Directors: James McMillan, Hugh McMillan, W. C. McMillan, James W. Millen. The directors will meet later to elect officers.

MARINE PATENTS ISSUED.

Patents issued February 5, 1901. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cents each.

667,223. Propeller. C. D. Keller, Toledo, Ohio.

667,456. Life saving raft-boat. H. Redden, New York City. Assignor of two-thirds to E. E. M. Bullowa, same place.

667,480. Clearing device for life boats. E. Wolfgang, London, England.

667,482. Apparatus for steering and stopping ships. Jan Albarda, Apeldoorn, Netherlands.

667,603. Sheathing for ships. W. Stiven, Jersey City, N. J.

CONDITIONAL SHIPBUILDING CONTRACT.

The following report seems to have gone the rounds of the press without due and faithful inquiry as to its authenticity.

"The Atlantic Transport Co., which has had its ships built abroad, has given a contract for four vessels for the trans-Atlantic trade to the New York Ship Building Co., Camden, N. J. The ships will run between London and New York, Philadelphia and Baltimore.

Two of the ships are to be 600 feet long and the others a few feet shorter. Their equipment will be equal to anything engaged in the Atlantic service. The two largest vessels are to be of 12,000 tons capacity, and the four when completed will cost the company over $5,000,000. Each vessel is to be constructed of steel throughout, and will be built in excess of the underwriters' requirements. The machinery will consist of triple expansion engines, and boilers of the Scotch type, able to withstand the highest pressure for vessels of that type. This award, given to the New York Ship Building Co., makes eight steamships to be constructed by that concern, the others being three vessels for the American-Hawaiian Steamship Co. and a passenger steamer for the M. S. Dollar Steamship Co., of San Francisco, to be engaged in the Yukon river trade."

We take pleasure in putting our readers right on this subject and state from an official source that the contract for the four passenger and freight steamers has not yet been definitely placed in the hands of the New York Ship Building Co., Camden, N. J. and that the order is subject to the passage of the shipping bill now before the Senate. The other four steamers mentioned are under construction at the Camden yards as stated.

LAKE AND RAIL ASSOCIATION.

About twenty lake companies and railroads were represented at the meeting in Toronto of the Lake and Rail Association, held last week. A new competing line for upper lake business, the Algoma Central Railway Steamship Co., one of Clergue's new enterprises, was admitted to membership. This company will run five boats, three below and two above the "Soo," their territory ranging between Windsor, Georgian Bay and Duluth.

Heretofore east-bound rates have been higher than those of west-bound. Hereafter the rates will be the same both ways, the rate out of Toronto prevailing. Slight increases in rates were made between northern lake ports.

It was decided to hold next year's meeting at Halifax, but the distance is so great a change may be made to the "Soo."

THIRTY-FOOT CHANNEL IN THE ST. LAWRENCE RIVER.

At the weekly meeting of the Montreal harbor board a letter was read from Hon. J. I. Tarte, minister of public works, saying that if he could obtain the assent of the government he intended dredging the St. Lawrence river channel 30 feet deep and 450 feet wide within the next two years.

THE Havana floating dry dock has been rejected by our government, which has no present need for such a dock and declines to purchase at any figure. If it proves to be an obstruction in the harbor, Spain may be requested to remove it.

Government Proposals.

U. S. ENGINEER OFFICE, 1637 Indiana Ave., Chicago, Ill., February 4, 1901. Sealed proposals for dredging in Chicago harbor will be received until 12 noon, central time, March 12, 1901, and then publicly opened. Information furnished on application. J. H. WILLARD, Maj., Engrs. 6–9

U. S. ENGINEER OFFICE, Galveston, Tex., January 28, 1901. Sealed proposals for building hull and machinery of self-propelling hydraulic dredge, will be received here until 2 p. m., February 28, 1901, and then publicly opened. Information furnished on application. C. S. RICHE, Capt., Engrs. 5–8

U. S. ENGINEER OFFICE, Buffalo, N. Y., January 25, 1901. Sealed proposals in duplicate for construction of concrete superstructure on breakwater at Buffalo, N. Y., will be received here until 11 a. m., February 25, 1901, and then opened. Information furnished on application. T. W. SYMONS, Maj., Engrs. 5–8

U. S. ENGINEER OFFICE, Pittsburg, Pa., February 7, 1901. Sealed proposals for completing two locks and dams and building four locks and dams on Monongahela River, above Morgantown, will be received here until 12 M., March 9, 1901, and then publicly opened. Plans may be seen here. Information furnished on application. C. F. POWELL, Maj., Engrs. 6–9

SEALED PROPOSALS will be received at the office of the Light-House Board, Washington, D. C., until 2 o'clock, p. m., March 2, 1901, and then opened, for furnishing the materials and labor of all kinds necessary for the construction and delivery of the twin-screw, steel, steam light-house tender Larkspur, in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to this office, or at the office of the Light-House Inspector, Tompkinsville, N. Y. F. J. HIGGINSON, Rear Admiral, U. S. N., Chairman. 7–8

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THE NEW
BAUSCH & LOMB-ZEISS
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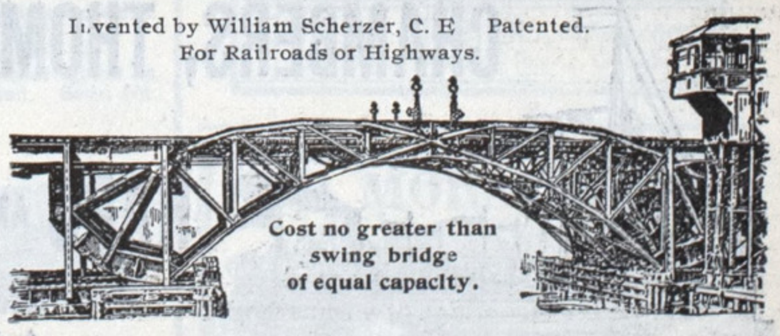

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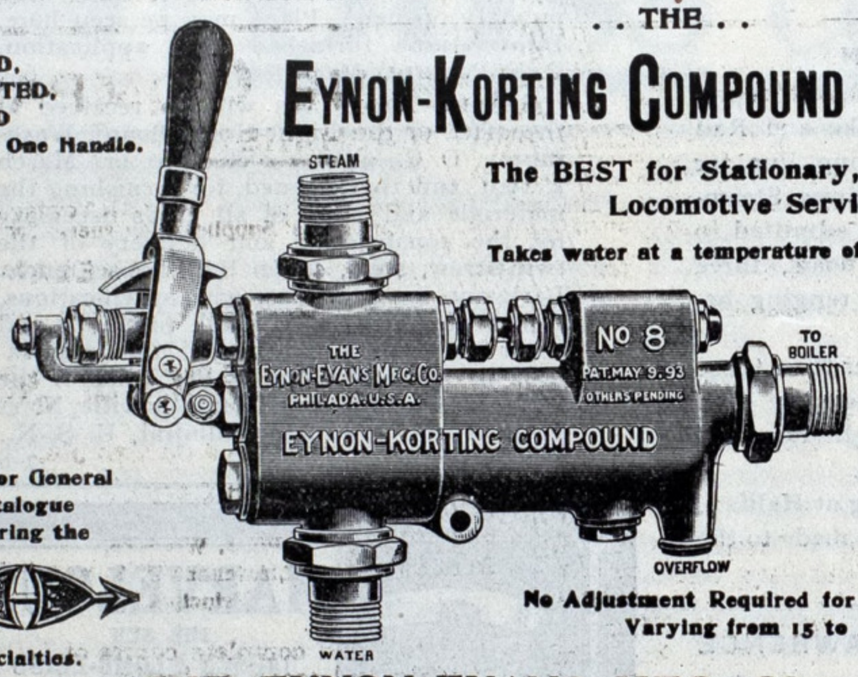

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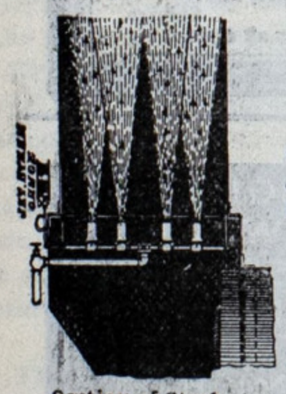
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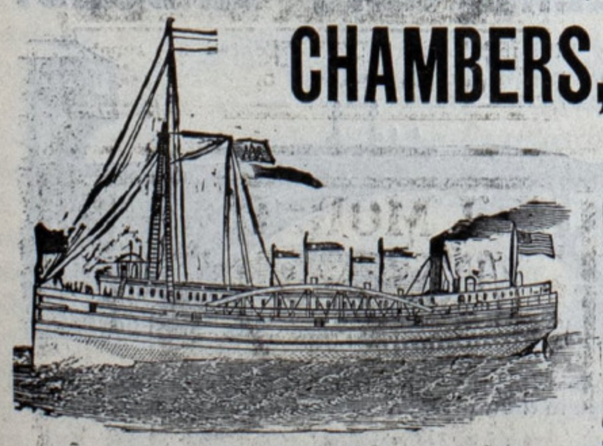

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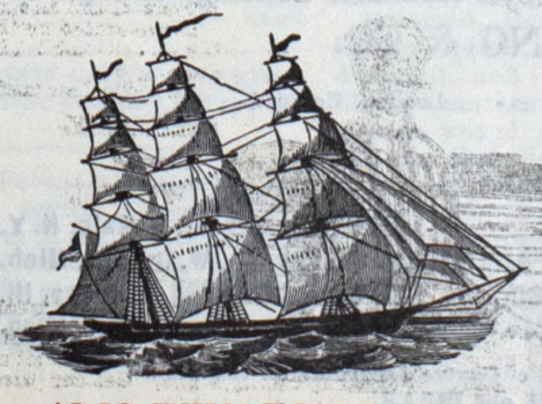

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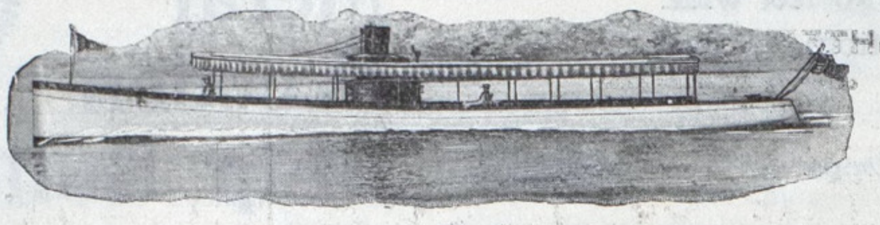

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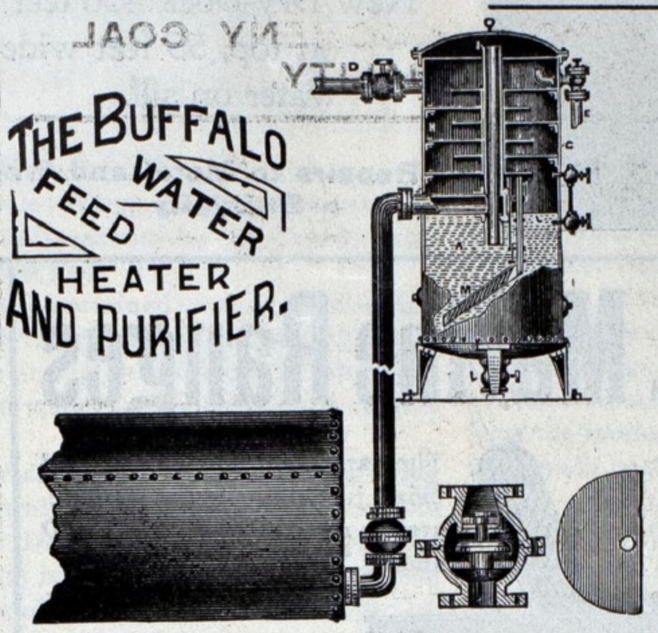

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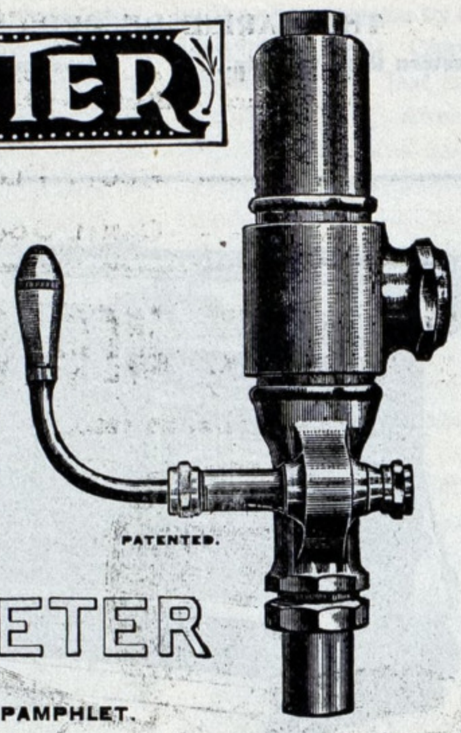

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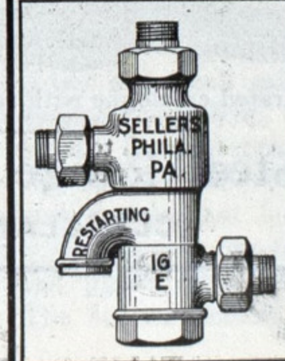

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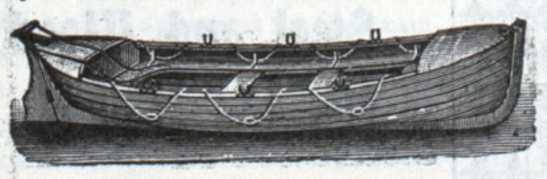

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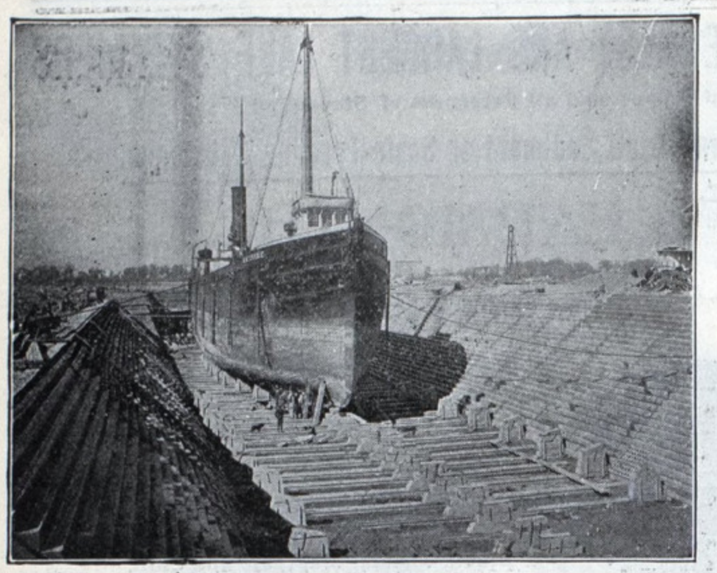

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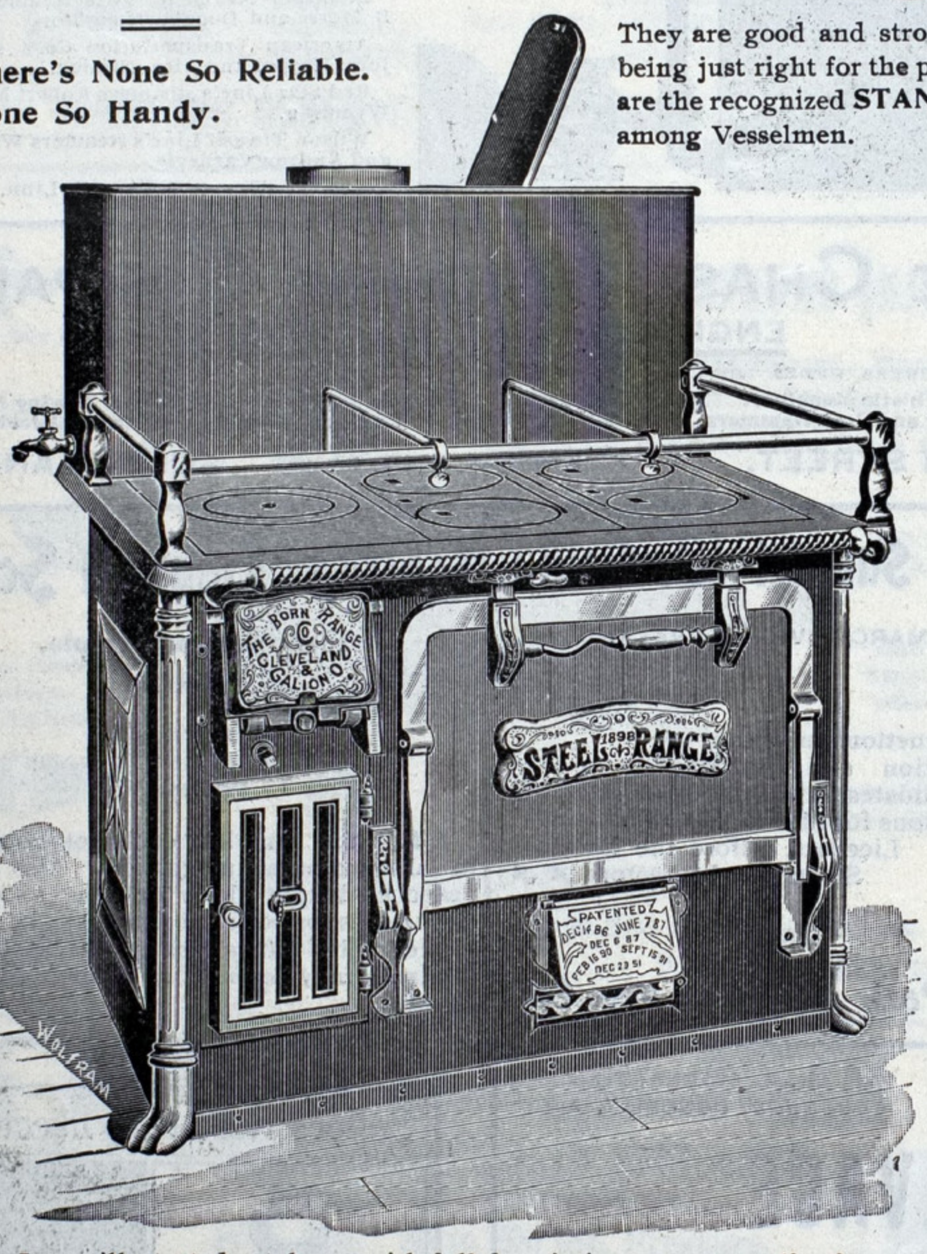

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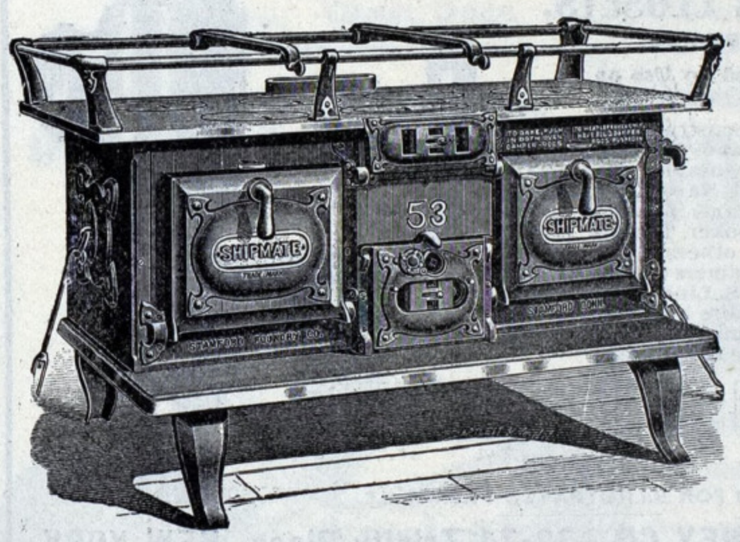

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